

APRIL 19, 1954

Santa Fe's Systemwide Radio . . . p. 40

RAILWAY AGE

The Standard Railroad WEEKLY Since 1856

This month Dr. Oscar Horger demonstrates that absence of lateral movement is one reason why:

The taper makes TIMKEN® the only journal bearing that delivers what you expect when you buy a roller bearing

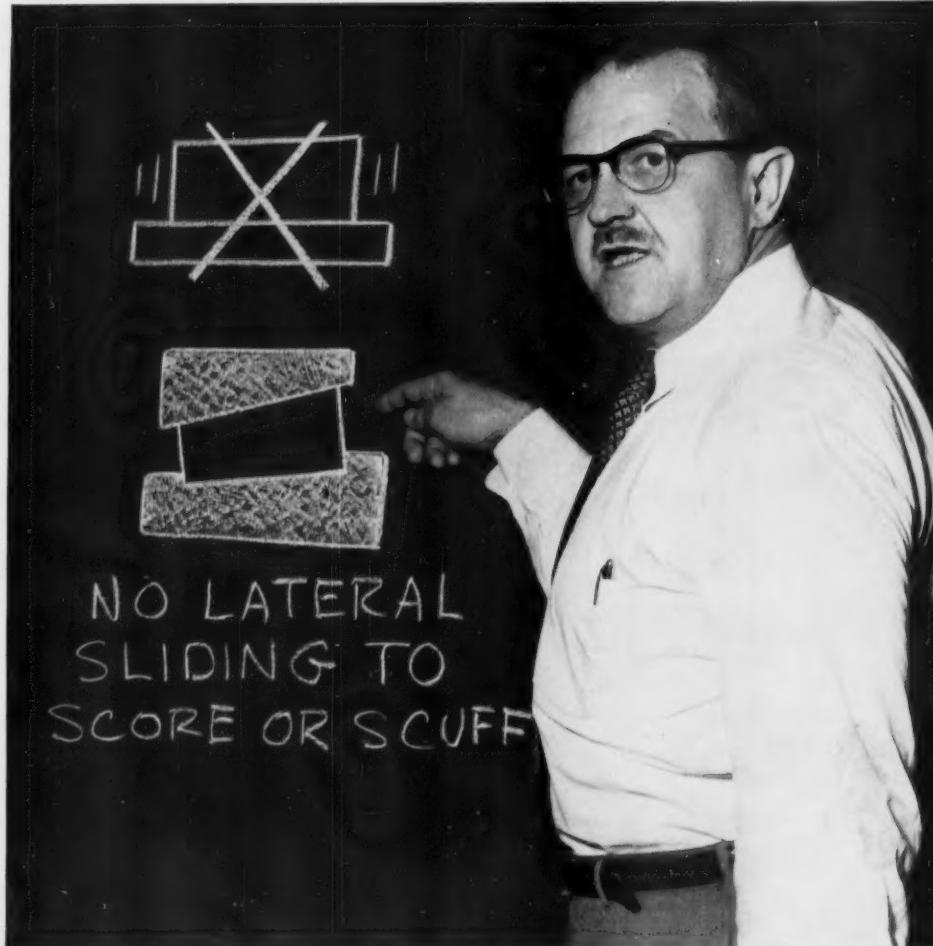
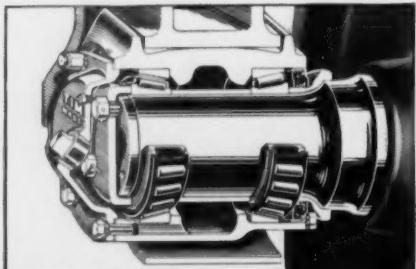
RAILROADS are switching to roller bearings to: 1) end the hot box problem, 2) cut operating and maintenance costs to a minimum; other advantages are secondary. And the Timken® tapered roller bearing is the *one* bearing you can count on to do this. It's the taper! Here's why:

1) *No lateral movement within the bearing.* In straight roller designs, incessant lateral movement scuffs rollers and races, shortening bearing life. Lubricant is pumped through the seal and out of the journal box, dirt and water are drawn in. The auxiliary devices, needed to take thrust loads, are hard to lubricate with grease and need more maintenance.

The taper in Timken bearings prevents lateral movement, takes thrust loads. Because Timken bearings always roll, there's no scoring, scuffing or pumping. Result: the hot box problem is eliminated. Less maintenance and lubricant are needed. Bearing life is increased.

2) *Positive roller alignment.* The taper holds roller ends snug against the rib, where wide area contact keeps rollers aligned. There's no skewing of rollers to upset full line contact, shorten bearing life.

Get what you pay for when you switch to roller bearings to end the hot box problem and cut operating and maintenance costs to a minimum. Get Timken tapered roller bearings. The Timken Roller Bearing Company, Canton 6, O. Cable address: "TIMROSCO".



THE TAPER MAKES **TIMKEN** THE BEARING YOU TRUST

TRADE-MARK REG. U. S. PAT. OFF.

NOT JUST A BALL □ NOT JUST A ROLLER □ THE TIMKEN TAPERED ROLLER □ BEARING TAKES RADIAL □ AND THRUST — □ LOADS OR ANY COMBINATION



'53 Purchases Totaled \$1.9 Billion

Revenues and Expenses of Class I Railroads

Perfect Shipping = Good Will

Progress of Direct Route Plan

Coal-Burning Turbine Progress



Horsepower for
Horsepower

1/3
Fewer Units
to
Service
with
**TRAIN
MASTER**
...than with any
other locomotive

Your Soundest Motive Power Investment

TRAIN MASTER

Fairbanks, Morse & Co.,
600 S. Michigan, Chicago 5, Illinois



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DIESEL LOCOMOTIVES • ENGINES • RAILCARS, RAILROAD EQUIPMENT • ELECTRICAL MACHINERY • PUMPS • SCALES • WATER SERVICE EQUIPMENT • HAMMER MILLS • MAGNETOS

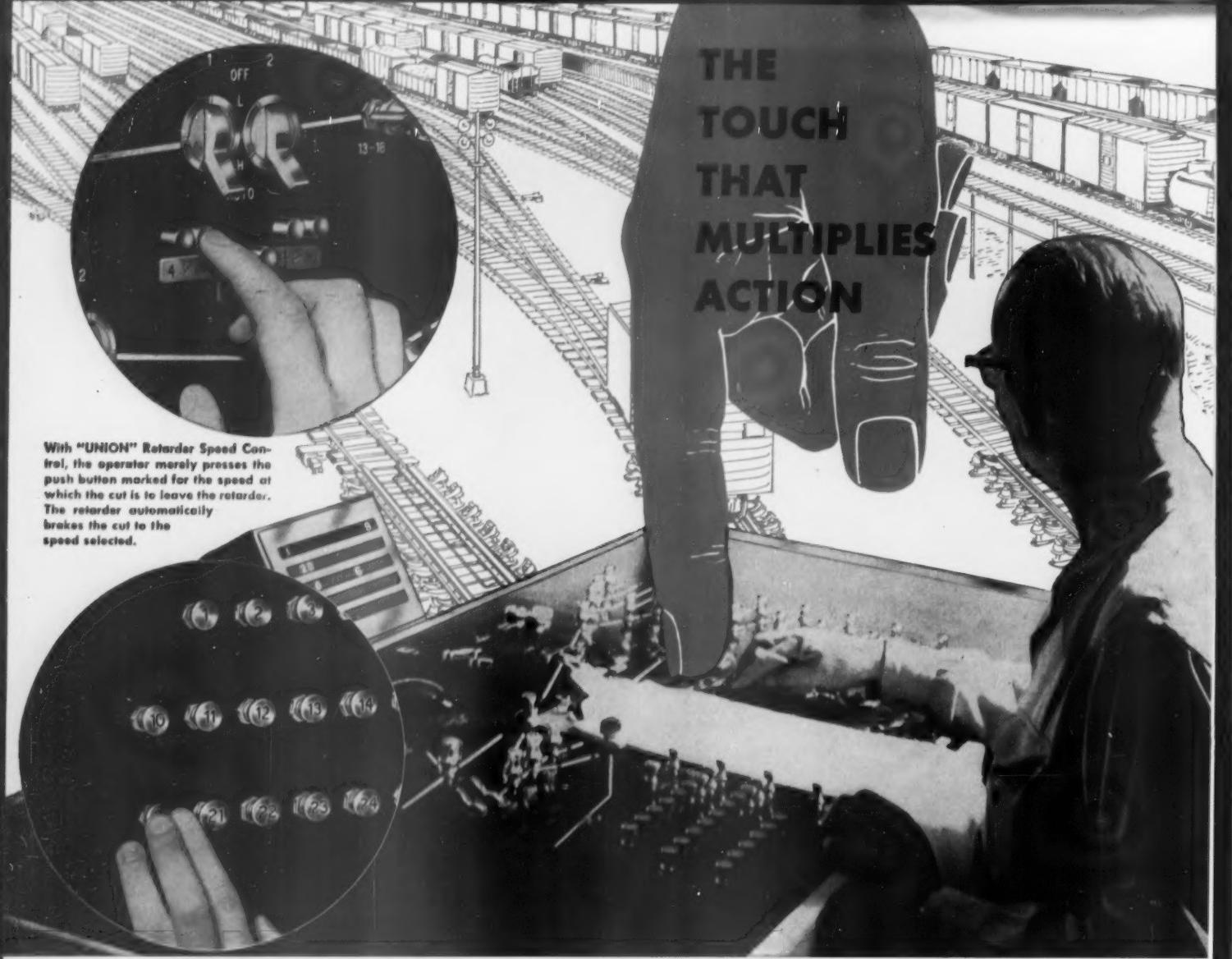


NEW PORTLAND, ME., YARD HAS HEAT-TREATED STOCK RAILS—This is one of ten new turnouts in the newly relocated yard of the Portland Terminal Company, a subsidiary of the Maine Central Railroad. These turnouts feature Bethlehem heat-treated stock rails. Bethlehem heat-treating facilities and techniques can treat switch points, stock rails or other trackwork up to 60 ft in length, to reduce battering and cutting of rail heads. If you have an improvement program under way, call in a Bethlehem engineer. Whether on heat-treating or some other phase of track-planning, he can talk your language and help you plan your layout. Just get in touch with the Bethlehem sales office nearest you.

Bethlehem Steel Company, Bethlehem, Pa. On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation.
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BETHLEHEM STEEL





With "UNION" Retarder Speed Control, the operator merely presses the push button marked for the speed at which the cut is to leave the retarder. The retarder automatically brakes the cut to the speed selected.

The operator merely presses one push button—"UNION" Automatic Switching correctly lines the switches as the cut proceeds to its designated track.

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- ★ Greater utilization of yard space.
- ★ Faster make-up and clearing.
- ★ Increased yard and operator capacity.
- ★ Lower per diem costs.

THE TOUCH THAT MULTIPLIES ACTION

FASTER, LOWER-COST CLASSIFICATION WITH "UNION" AUTOMATIC SWITCHING AND Retarder Speed Control

For retarder classification yards, practical multiplication of action means concentration of switch and retarder control at *one* point. When you install "UNION" Retarder Speed Control and Automatic Switching, you accomplish this vital step in the control of switches and retarders.

This is the control that expedites freight car classification. One operator—at one machine—can do the job . . . just by pressing buttons.

Our representative will be pleased to help you adapt "UNION" Retarder Speed Control and Automatic Switching to *your* specific requirements.

UNION SWITCH & SIGNAL

DIVISION OF WESTINGHOUSE AIR BRAKE COMPANY

SWISSVALE  PENNSYLVANIA

NEW YORK CHICAGO ST. LOUIS SAN FRANCISCO

RAILWAY AGE

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April 19, 1954

Vol. 136, No. 16

Week at a Glance

The 1953 freight claim bill was up by 3.4% as compared with payments for 1952, but the number of new claims was down. 10

"Piggyback" is moving ahead—with the NYC planning to build terminals for that purpose in five major cities, and the Katy expecting to begin operations "in a limited way" at "an early date." 10, 11

Perfect shipping results in good will, claims the president of a large Eastern railroad in pointing out that the dollar loss per damage claim is secondary in importance to the loss of harmony incurred. 15

Freight operating statistics of 52 major railroads for the month of January 1954, with selected items compared with January of last year. 16

FORUM: For a bright future a great deal depends upon the railroads' ability to bring pricing and services up to date while gaining regulatory and public acceptance of their actions. 39

Santa Fe's systemwide radio network, with installations in major yards, on through freights and at wayside stations, speeds operations. 40

Battered hopper doors not only drain away coal but strain the bonds of good will between the shipper and the railroad. 43

The coal-burning turbine is being steadily improved as more efficient means of ash separation are tested in conjunction with other innovations. 44

Nailable steel doorposts, a recent development in the prevention of car side-lining damage, have been installed by the Chicago Great Western. 48

Passenger Traffic Executives say:

"Now we know why the Hertz Rail-Auto Plan switches millions of passenger miles to railroads!"

"AND—it can bring
millions of additional
miles in 1954!"



"We know... because we use the Hertz Rail-Auto Plan ourselves! On business or pleasure trips... wherever we go," say the General Passenger Agents, "we travel by train for speed... comfort and relaxation... then at our destination we rent a clean new car from Hertz to drive as our own. This Hertz Rail-Auto Plan is convenient... sensible... and time-saving. And that's not all."

"We know from personal experience that aggressive promotion of the Hertz Rail-Auto Plan is one sound way to switch millions of inter-city motorists from the highways to the railroads!"

And the facts prove it! Last year alone, people who rented cars from Hertz at their destination actually traveled more than 136,000,000 miles on railroads! These were people who used the Rail-Auto Plan. And—there are thousands more!

It is estimated that in 1953 motorists drove close to 500 billion miles between cities. Analysis shows that they drove these hazardous tiring miles... NOT because they preferred to drive... BUT because many times they needed a car at their destination! And remember—this staggering potential of 500 billion miles has hardly been tapped! Now is the time to switch more of this huge mileage to the Hertz Rail-Auto Plan.

**How you can help promote the Hertz Rail-Auto Plan...
help switch additional revenue to your railroad**



1. TRY the Rail-Auto Plan yourself. Enjoy its many advantages. See for yourself why thousands of travelers prefer it to highway travel.

2. TELL your ticket agents about the 10% commission Hertz pays them. Urge them to ask passengers this

simple question: "*May I reserve a car from Hertz at your destination?*" It takes only a few minutes to fill out the reservation forms... and the Hertz station concerned will pay—promptly—10% commission on the total rental charge.

3. FREE! To remind your passengers of Hertz Service and the Rail-Auto Plan, Hertz provides plastic 3½" signs attractively printed with these words: "Reserve your Hertz Rent-A-Car from your ticket agent". These signs clamp on the grill of your ticket agents' windows.

Hertz also provides for the counters of your ticket agents and for ticket envelopes, small 2" x 4½" folders describing Hertz Service and the Rail-Auto Plan. Both items available to you in any quantity at no charge.

4. HERTZ spends nearly \$1,000,000 a year in leading national magazines to sell the Rail-Auto Plan. In your own general advertising, promote the Plan. Show its many advantages. Use displays in your ticket offices. Advertise the Plan in your timetables... on your billboards... highway over-passes.

5. AND REMEMBER—only Hertz—the world's largest rent-a-car system—offers 30 years' experience... with more than 8,600 cars at nearly 800 stations in over 550 cities throughout the world. Every car is new, clean... and Hertz furnishes all gasoline, oil... Public Liability, Property Damage, Fire and Theft Insurance, and \$100.00 deductible collision protection—at no extra cost! What's more—Hertz has more than 1,500,000 people who hold Hertz Charge Cards and Courtesy Cards. Also, Hertz honors Rail Credit Cards.

6. If you have any questions—WRITE today for additional information... reservation forms and other material that your ticket agents can use.

Department D44, 218 South Wabash Avenue,
Chicago 4, Illinois; Phone: WEbster 9-5165

HERTZ Rent-A-Car SYSTEM

Current Statistics

Operating revenues, two months	
1954	\$ 1,472,160,235
1953	1,675,996,363
Operating expenses, two months	
1954	\$ 1,213,739,684
1953	1,282,807,100
Taxes, two months	
1954	\$ 141,736,619
1953	199,789,450
Net railway operating income, two months	
1954	\$ 76,991,960
1953	157,866,816
Net income, estimated, two months	
1954	\$ 40,000,000
1953	114,000,000
Average price railroad stocks	
April 13, 1954	\$ 62.50
April 14, 1953	65.30
Carloadings, revenue freight	
Fourteen weeks, 1954	8,440,203
Fourteen weeks, 1953	9,587,304
Average daily freight car surplus	
Week ended April 10, 1954	139,136
Week ended April 11, 1953	65,974
Average daily freight car shortage	
Week ended April 10, 1954	211
Week ended April 11, 1953	1,316
Freight cars delivered	
March 1954	4,823
March 1953	6,679
Freight cars on order	
April 1, 1954	20,966
April 1, 1953	68,533
Freight cars held for repairs	
March 1, 1954	98,077
March 1, 1953	94,165
Average number of railroad employees	
Mid-March 1954	1,058,762
Mid-March 1953	1,188,503

RAILWAY AGE IS A MEMBER OF ASSOCIATED BUSINESS PUBLICATIONS (A.B.P.) AND AUDIT BUREAU OF CIRCULATION (A. B. C.) AND IS INDEXED BY THE INDUSTRIAL ARTS INDEX AND BY THE ENGINEERING INDEX SERVICE. RAILWAY AGE INCORPORATES THE RAILWAY REVIEW, THE RAILROAD GAZETTE, AND THE RAILWAY AGE GAZETTE.

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Week at a Glance CONTINUED

How goes the direct route plan? Some think it should be extended to gondolas and flats; others would wait a while before passing judgment. **49**

William White's contract with the New York Central has been revised by the road's board of directors, at Mr. White's request, in order that he may sever said contract if and when Robert R. Young gains control of the road. **53**

To be cut out and filed for reference: Revenues and expenses of the nation's Class I roads for the month of February and the first two months of '54. **57**

BRIEFS

Collection of freight traffic charges is the subject of the latest employee training pamphlet prepared by the Rock Island. Like its predecessor on demurrage (*Railway Age*, November 30), it is liberally sprinkled with humorous cartoons and is written in completely non-technical language, using a question-and-answer technique. The Rock Island is now planning an entire series of similar pamphlets to cover the technical side of freight station accounting. The current one is being distributed by A. O. Gibson, the road's secretary-treasurer at Chicago.

Pattern of relief from AB brake order which ICC will grant for camp and work cars appears to have been set out in Lehigh Valley case. That road got indefinite postponement of order with respect to such cars, on condition that they be operated in non-revenue trains of not exceeding 20 cars and at speeds not exceeding 30 mph.

Over four million loaded freight cars passed through the Chicago gateway in 1953, only 20,746 less than in 1952. There was a slight increase in loaded cars shopped for defects (one in 131) and shifted loads adjusted, but a decided reduction in cars rejected as not fit for loading and in empty hopper and gondola cars received with drop doors open or improperly secured. All but 45 of

EASIEST

TO
INSTALL
AND
MAINTAIN



Hyatt Roller Bearing Journal Boxes are ready to install just as they come from the factory. After box is slipped into place, locking cup is bolted to axle-end, grease is added to the fitting, and box is ready to roll!

Roller bearing journal boxes will put an end to your freight car hot box problem. But only Hyatt boxes will give you maximum savings on installation and maintenance.

Installation of Hyatt straight-roller boxes is a one-man job. It takes only a few minutes. No special tools are required and bearing adjustments are not necessary! The box is simply slipped onto the axle—over the one-piece inner race, locked into position, and lubricated. That's all.

Disassembly, naturally, is equally simple. Press fits are not disturbed when removing either a box or a wheel, and because spare axles and wheels need to be fitted with inner races only, your investment in spare parts is substantially reduced.

Write for our new Maintenance Manual. It will give you complete information on the amazingly simple assembly and maintenance procedure for Hyatt Journal Boxes.

HYATT

STRAIGHT

BARREL

TAPER

HYATT BEARINGS DIVISION • GENERAL MOTORS CORPORATION • HARRISON, NEW JERSEY

ROLLER BEARING
JOURNAL BOXES

Week at a Glance CONTINUED

2,332 perishable loads in cars shopped for repairs reached destination on time.

Running times of the New York Central's "Twentieth Century Limited" and "Commodore Vanderbilt," and of the Pennsylvania's "Broadway Limited," will be cut to 15½ hours from Chicago to New York, effective April 25. On the same date, "Century" and "Broadway" westbound schedules will be cut to 15¾ hours. The Central plans eventually to reduce eastbound schedules of the "Century" and the "Commodore" to 15 hours.

Faster freight schedules from California to the Pacific Northwest have been put into effect by the Southern Pacific, to achieve a day's saving in delivery time at Portland and Seattle. The SP also is offering an expedited premium-rate 62-hour service for fresh fruits and vegetables from Colton, Cal., and Roseville to Chicago.

"The greater effectiveness with which railroads combine manpower with improved materials and machines . . . to produce transportation service more efficiently" has enabled them to pay an average of \$2.49 for labor and materials which cost \$1 in 1939, while increasing average ton-mile revenues by only 52%. This striking contrast between the increase in railroad expenses and railroad charges was brought out by AAR President W. T. Faricy in a recent address at Pullman, Wash.

Major league baseball teams will put in more than 200,000 miles of travel during the current baseball season, and about 90% will be by train, the AAR has estimated. Working timetables, in preparation for weeks before the season began, show in what city and on what day and hour sleeping, lounge, dining

and baggage cars are to be spotted to take care of a ball club due to hit the road.

Arbitration board hearings on demands of Pullman conductors for a 174-hour work month instead of the present 210, will begin in Chicago May 3. The three-man board includes: (for the company) Mason B. Osburn, senior vice-president of the Pullman Company; (for the Order of Railway Conductors) Roger Sarchet, chairman of the third division of the National Railroad Adjustment Board; and (neutral member) A. Langley Coffey, Tulsa, Okla., lawyer.

"Big Boy"—the story of the shift from steam power to diesel, as told through the lives of an engineer and his son—are the theme of "Robert Montgomery Presents" over NBC-TV network Monday, April 19, from 9:30 to 10:30 p.m., E.S.T. This railroad show will be presented live over 62 stations; 31 will carry the program by delayed telecast from seven to 15 days later.

Average straight-time hourly pay of railroad employees in 1953 was \$1.858 per hour. This figure, calculated by the ICC's Bureau of Transport Economics and Statistics in its latest "Monthly Comment," compared with 1952's \$1.812 and 1945's \$0.916. Total compensation paid to all employees last year took 49.9% of gross revenues.

Although Congress has reduced the tax on passenger travel from 15% to 10%, the 3% tax on freight remains. The Railway Business Association has published a pamphlet urging immediate repeal of all U.S. transportation taxes. It points out that Canada abolished its excise tax on transportation in 1949; and that the U.S. taxes are an "artificial incentive to expansion of private carriers to the substantial detriment of railways and other for-hire carriers."



How to drain water pockets quickly on an 80-foot-high fill

Chalk up another use for that versatile off-track unit, the Cat® D6 Tractor with the No. 6S Bulldozer. The Soo Line Railroad has found it to be one answer to shifting roadbeds.

Sixteen miles west of Superior, Wisconsin, vertical test drilling indicated water 30 feet below the roadbed on an 80-foot-high fill. Horizontal shafts drilled at the 30-foot level drained the trapped water. Then the powerful D6 'dozed out leads and channels to the drainage stream below the fill.

The road also uses this unit to widen out and slope right-of-way.

A close look at the No. 6S Bulldozer explains why so many railroads use it for off-track work. The mold-board is engineered to roll the earth forward and hold large loads on the blade. The blade itself is extra strong. A four-box section reinforcement runs its entire length for rigidity. And it's made of high carbon steel for longer wear. How does it handle from the operator's seat? Easily—and visibility is excellent. What's more,

it can be both tilted and tipped by one man. These and many other features contribute to this rig's ability to deliver big production at low cost!

Your Caterpillar Dealer is a convenient source of genuine parts, so you don't have to carry a large inventory. He's nearby. Why not call him today and find out how the use of rugged yellow machines on off-track policing can pay off for you? He'll be glad to demonstrate!

Caterpillar Tractor Co., Peoria, Illinois, U. S. A.

CATERPILLAR®

*Both Cat and Caterpillar are registered trademarks—®



R A I L W A Y A G E

Railroads' 1953 Purchases Totaled \$1.9 Billion

Expenditures for fuel, materials and supplies were up \$102.7 million from 1952 figure

Class I railroads in 1953 spent \$1,920,481,000 for fuel, materials and supplies of all kinds, excluding equipment, according to the Association of American Railroads. This was an increase of \$102,731,000 above the comparable 1952 figure of \$1,817,750,000.

For fuel alone, Class I roads spent \$509,611,000 in 1953, compared with \$538,659,000 in 1952. Expenditures for coal totaled \$148,774,000 in 1953, a reduction of \$46,972,000 compared with 1952. On the other hand, expenditures for diesel fuel, \$300,219,000, were up \$38,423,000.

The fuel total was exceeded by expenditures for iron and steel products — \$612,584,000 in 1953, compared with 1952's \$513,060,000. Detailed figures are set out in accompanying tables.

**ANNUAL PURCHASES OF MATERIALS AND SUPPLIES (EXCLUDING EQUIPMENT)
1923-1953—Class I Railroads (Thousands of dollars)**

Year	Fuel	Forest products	Iron and steel products	Miscellaneous	Total	Total less fuel
1923	\$617,800	\$232,511	\$464,955	\$423,437	\$1,738,703	\$1,120,903
1924	471,656	180,872	365,610	324,917	1,343,055	871,399
1925	459,465	170,305	419,255	343,018	1,392,043	932,578
1926	473,354	186,291	507,302	392,085	1,559,032	1,085,678
1927	438,821	175,729	407,304	374,074	1,395,928	957,107
1928	384,608	160,794	374,575	351,364	1,271,341	886,733
1929	364,392	157,551	406,962	400,630	1,329,535	965,143
1930*	306,500	134,600	304,700	292,700	1,038,500	732,000
1931*	244,500	76,250	188,600	185,650	695,000	450,500
1932*	178,250	52,200	94,550	120,000	445,000	266,750
1933	180,526	42,442	104,327	138,555	465,850	285,324
1934	217,294	64,271	150,671	167,988	600,224	382,930
1935	232,723	57,367	135,397	167,538	593,025	360,302
1936	272,270	76,683	239,486	214,982	803,421	531,151
1937	294,293	104,707	310,658	256,725	966,383	672,090
1938	243,783	56,968	127,141	155,390	583,282	339,499
1939	257,273	67,971	236,338	205,732	769,314	512,041
1940	273,556	82,185	264,480	234,242	834,463	580,907
1941	349,765	103,771	379,951	327,787	1,161,274	811,509
1942	426,335	115,227	353,957	364,292	1,259,811	833,476
1943	527,296	150,255	339,631	377,099	1,394,281	866,985
1944	585,832	158,957	431,692	434,048	1,610,529	1,024,697
1945	555,155	136,962	418,438	461,849	1,572,404	1,017,249
1946	553,153	148,984	416,303	452,115	1,570,555	1,017,402
1947	691,630	171,592	503,965	542,022	1,909,209	1,217,579
1948	833,040	166,488	590,289	593,514	2,183,331	1,350,291
1949	564,159	142,232	454,079	480,936	1,641,406	1,077,247
1950	608,719	121,256	509,506	500,427	1,739,908	1,131,189
1951	621,497	188,186	703,885	662,291	2,175,859	1,554,362
1952	538,659	176,966	513,060	589,065	1,817,750	1,279,091
1953	509,611	176,189	612,584	622,097	1,920,481	1,410,870

*Railway Age estimates.

Note: "Iron & Steel products" and "Miscellaneous," 1927-48, revised to conform with report MS-24, Year 1949.

Source: Reports of carriers to Bureau of Railway Economics.

PURCHASES OF FUEL, MATERIAL AND SUPPLIES—Class I Railroads—Calendar Years 1953 and 1952

Item	1953	1952
FUEL:		
Bituminous coal	\$144,162,000	\$191,265,000
Anthracite coal	4,612,000	4,481,000
Fuel oil—Residual	45,036,000	64,205,000
Fuel oil—Diesel	300,219,000	261,796,000
Gasoline	10,472,000	9,601,000
All other (coke, wood, fuel for illumination)	5,110,000	7,311,000
Total fuel	\$509,611,000	\$538,659,000
FOREST PRODUCTS:		
Cross ties (treated and untreated)	596,382,000	\$101,314,000
Switch & Bridge ties (treated & untr.) and timber	25,472,000	28,076,000
Lumber (equipment, rough and finished)	43,039,000	36,874,000
Other forest products	11,296,000	10,702,000
Total forest products	\$176,189,000	\$176,966,000
IRON AND STEEL PRODUCTS:		
Steel rail (new and second hand, except scrap)	\$120,597,000	\$77,676,000
Wheels, axles and tires	57,963,000	56,438,000
Frogs, switches and crossings, and parts of some	30,558,000	30,712,000
Track fastenings, track bolts, spikes, etc.	89,293,000	73,865,000
Iron bridges, turntables & struct. steel, all kinds	12,191,000	8,230,000
Bar iron and steel, spring steel, tool steel, unfabricated rolled shapes, wire netting and chain, except light coil; boiler, firebox, tank, and sheet iron and steel, all kinds	58,988,000	46,247,000
Forgings and pressed steel parts for locomotives	2,746,000	2,986,000
Car forgings, iron and steel, and fabricated or shaped steel, for passenger and freight cars	33,936,000	40,213,000
Flues and tubes for locos. & stationary boilers	2,833,000	3,163,000
Bolts, nuts, washers, rivets, lag screws, pins & studs	15,021,000	11,272,000
Springs, helical and elliptical, all kinds for locomotives and cars	6,243,000	4,368,000
Locomotive and car castings, beams, couplers, frames and car roofs.	89,215,000	74,391,000

Item	1953	1952
Track and roadway tools, all kinds, including hand and power operated tools, miscellaneous roadway material and fencing. Motor, hand, push and trailer cars, and parts for same	18,106,000	17,318,000
Machinery and repair parts	28,832,000	26,314,000
Pipe, iron and steel, and fittings, all kinds	10,756,000	9,223,000
Hardware, all kinds, including machine tools, such as drills, taps, reamers, dies, chasers, including air tools & parts	10,714,000	8,351,000
All other iron and steel products, incl. pig iron	15,022,000	14,452,000
Total iron and steel products	9,570,000	7,641,000
MISCELLANEOUS:	\$612,584,000	\$513,060,000
Cement, lime, plaster, bldg. brick & other bldg. mats.	\$11,905,000	\$9,708,000
Lubricating oils and grease; illuminating oils, boiler compound; waste	42,151,000	40,952,000
Non-ferrous metal and non-ferrous metal products	45,018,000	42,967,000
Ballast	32,215,000	29,623,000
Electrical materials including electrical materials for Diesel locomotives	35,515,000	54,325,000
Stationery and printing	34,719,000	33,529,000
Commissary supplies for dining cars & restaurants	41,023,000	43,980,000
Rubber and leather goods	12,650,000	10,816,000
Glass, drugs, chemicals, including chemicals for timber treatment; painters' supplies	56,698,000	49,256,000
Arch brick for locomotives	2,060,000	2,585,000
Passenger car trimmings	17,592,000	15,315,000
Locomotive, train and station supplies	31,031,000	27,855,000
Interlocking and signal material	52,087,000	54,221,000
Telegraph, telephone and radio material	17,376,000	16,365,000
Air brake material	23,088,000	23,253,000
Standard & spec'l mechanical appliances for locos.	10,058,000	9,489,000
Automotive equipment and supplies, incl. diesel material not elsewhere classified	93,254,000	84,422,000
All other miscellaneous purchases	43,657,000	40,404,000
Total miscellaneous purchases	\$622,097,000	\$589,065,000
Grand Total	\$1,920,481,000	\$1,817,750,000

Source: Reports of carriers to Bureau of Railway Economics.

Operations

'53's Freight Claim Bill Was Up

Was 3.4% above 1952—Ratio of charges to gross freight revenue also up slightly, but number of new claims declined

Claims for lost and damaged freight cost AAR member lines \$111,400,066 in 1953, the Freight Claim Division has revealed. This total is roughly \$3.7 million higher than its 1952 equivalent, and represents an increase of 3.4%. Carriers reporting represent about 95% of all U. S., Canadian and Mexican railroad mileage.

For U. S. roads alone, ratio of loss and damage charges to gross freight revenue was 1.18%—a slight increase over the 1.17% reported a year ago. New claims presented to member roads during 1953 totaled 3,523,508—a decline of 1.5% from the 1952 total.

The division's tabulation shows unlocated damage to freight in packages accounted for the largest single portion of the bill—40.9%. The next largest category was unlocated damage to freight not in packages 15.1%; followed by concealed damage, 10.8%.

By commodities, the largest single group was manufactures and miscellaneous — 17.2%. Freight forwarder traffic accounted for another 6.6%; food products (not frozen), 7.4%; new furniture, 6.0%; grain, 6.2%; and fresh vegetables, 6.1%.

Grain claims totaled nearly \$7 million. Approximately \$3.8 million

was attributed to unlocated loss, and an additional \$1.9 million to defective or unfit equipment. Similarly, in coal and coke traffic, the bill for which came to about \$2.6 million, unlocated loss or defective or unfit equipment accounted for a total of more than \$2.1 million.

Carload freight accounted for 87%

of the entire freight claim bill; LCL for 13%.

The greatest increase in claims paid (compared to 1952) was in non-agricultural machinery and parts, which soared 35%. Melons; lumber and forest products; petroleum oils; iron, steel and other metal articles; automobiles and parts; dry goods, clothing and textiles; furnaces, radiators and parts; enamelware, refrigerators, and freight forwarder traffic, all showed increases of more than 15%.

The greatest decrease was in "eggs, in shell"—down 59.2%. Other decreases were registered in livestock; tobacco; chinaware, crockery and earthenware; grain; and fresh citrus fruits. Carload claims were up 5.2% over 1952; LCL claims down 7.1%.

Katy Moves Toward "Piggyback"

Initial service will be limited in scale, but open to motor common carriers, President Fraser reveals

The Missouri-Kansas-Texas is moving toward creation of a "piggyback" service which will be of limited scale at the outset, but which will be offered to motor common carriers in addition to the road's own motor transport subsidiary.

President Donald V. Fraser told a Hillsboro, Tex., business group that studies now completed (*Railway Age*, October 19, 1953, page 15) "convince us the service is feasible and practical,

and that it will bring profitable business back to the rails. We also feel it will be attractive and profitable to motor common carriers; reduce highway congestion and hazard; and, more importantly, offer the shipping public a new and better service." He said that while the company expects to begin operations "in a limited way" at "an early date," it has not yet been determined between what points the service will first be instituted. Expan-



"PERFECT SHIPPING" IN DETROIT

STANDING ROOM ONLY in Fordson High School's 1,250-seat auditorium marked the Detroit Board of Commerce's "Consignor-Carrier-Consignee Round-up" sponsored in cooperation with 13 other traffic and carrier organizations. A three-hour program of music and entertainment, films on careful handling, shipper-carrier skit and panel discussion was moderated by M. M. Cronk, vice-president and general manager of the Chesapeake & Ohio, and B. E. Cehoe, general freight claim agent of the Ford Motor Company.



SHIPPER QUESTIONS were answered by this panel of railroad employees and supervisors: (Left to right) H. Walker, assistant general yardmaster, Detroit, Toledo & Ironton; E. B. Stevens, assistant trainmaster, Wabash; C. C. Miller, engineer, Pennsylvania; S. Hensen, conductor, Detroit Terminal; E. R. Martin, engineer, Grand Trunk Western; J. Levin, yard conductor, New York Central; and T. F. Weston, yard conductor, Chesapeake & Ohio. Cooperating motor carriers put on "perfect shipping" skits.

sion will follow, he said, as "the opportunity develops."

A Katy spokesman told *Railway Age* shortly before press time that the studies had been conducted by a committee of Katy traffic, operating and motor transport officers. "We are all enthusiastic about it," he said, "and we look for rapid developments once the service is started." He said that initially no new flat cars will be ordered and that existing cars will be altered and provided with tie-down equipment. Later, however, it is anticipated that special 72-ft flat cars, capable of handling two trailers each, will be acquired.

Likewise, the handling of entire trains of trailers is considered a development beyond the initial service which will probably be operated on existing fast freight schedules. No decision has been reached, he indicated, as to how the truck operators will be charged for the service, but Katy thinking has been in terms of a flat charge per trailer-mile. Because the road's highway transport subsidiary operates only in Missouri, Kansas and Oklahoma (although applications have been filed in Texas), it is likely that the initial trailers-on-flats service will be on an overnight basis between two points in that territory.

Loading methods have not been finally determined, he said, but it is contemplated that motor common carrier drivers will handle their own trailers right onto the flat cars.

Figures of the Week

1954 Capital Outlays Seen at \$854.1 Million

Estimates submitted by Class I line-haul railroads to the Bureau of Transport Economics and Statistics of the ICC indicate their gross capital expenditures in 1954 will total about \$854.1 million.

This was reported by the bureau in the latest issue of its "Monthly Comment."

The total is the aggregate of estimates submitted by 123 of the 130 Class I line-haul roads. It compares with a 123-road total of \$1,198 million

ACTUAL AND ESTIMATED GROSS CAPITAL EXPENDITURES OF CLASS I RAILWAYS, FIRST SIX MONTHS OF 1953 AND 1954

Period	Number of roads				Percentage distribution	
		Road	Equipment	Total	Road	Equipment
Actual:						
1st half 1953	130	\$180,174,570	\$464,508,844	\$644,683,414	27.9	72.1
1st half 1953*	126	172,442,946	451,056,818	623,499,764	27.7	72.3
Estimated:						
1st quarter 1954	126	76,162,485	191,054,561	267,217,046	28.5	71.5
2nd quarter 1954	126	99,597,309	124,368,033	223,965,342	44.5	55.5
1st half 1954	126	175,759,794	315,422,594	491,182,388	35.8	64.2
Percent of change:						
1st half 1954 vs. 1st half 1953	126	+1.9	-30.1	-21.2	..	..

*Excludes figures for 4 roads which did not furnish 1954 estimates.

week ended April 3 totaled 599,302 cars; the summary for that week, compiled by the Car Service Division, A. A. R., follow:

REVENUE FREIGHT CAR LOADINGS			
For the week ended Saturday, April 3			
District	1954	1953	1952
Eastern	107,638	125,825	125,869
Allegheny	113,582	130,334	147,206
Pocahontas	39,874	46,073	48,789
Southern	116,585	132,283	129,410
Northwestern	67,072	99,874	81,825
Central Western	100,059	110,997	114,008
Southwestern	54,492	59,131	59,780
Total Western Districts	221,623	270,002	255,613
Total All Roads	599,302	704,517	706,889
Commodities:			
Grain and grain products	40,110	41,376	41,776
Livestock	7,529	7,034	7,733
Coal	87,274	96,393	111,000
Coke	7,951	13,416	14,075
Forest products	38,720	45,423	42,366
Ore	14,588	44,999	27,977
Merchandise l.c.l.	64,591	71,458	77,801
Miscellaneous	338,539	384,418	384,161
April 3	599,302	704,517	706,889
March 27	601,426	715,333	725,487
March 20	609,959	701,065	720,009
March 13	609,883	700,183	706,975
March 6	590,567	684,864	713,112
Cumulative total,			
14 weeks	8,440,203	9,587,304	10,047,281

Rates & Fares

C&O Cuts Virginia Coach Fares by 25%

The Chesapeake & Ohio, on April 15, cut round-trip coach fares between Covington, Va., and Norfolk, and intermediate points, by 25 per cent. The trial period will extend until July 31. "If the tests are successful in increasing passenger business, they will be extended to other sections of the line," Hiram Askew, passenger traffic manager, said.

Organizations

West Coast Perishables Conference April 26-28

A tour of the Southern Pacific's classification yard and of Pacific Fruit Express facilities at Roseville, Cal., will climax the Conference on Transportation of Perishables to be held at the University of California's College of Agriculture at Davis, Cal., April 26-28.

In addition to sessions devoted to specific crops, the meeting will cover shipper's protection of perishables, standardization and inspection agencies, packaging and loading practices, and transit refrigeration. A symposium on railroad operation will be presented by H. C. Munson, vice-president and general manager, Western Pacific; A. D. Hanson, general manager, Union Pacific, at Salt Lake City; J. W.

Corbett, vice-president (operations), SP, and C. R. Tucker, vice-president (operations), Santa Fe.

Other speakers will include C. A. Naffziger, director of the AAR's Freight Loss and Damage Prevention section, and K. V. Plummer, vice-president and general manager, PFE.

AAR to Hold Container And Loading Seminar

The sixth of a series of seminars conducted at the Association of American Railroads' Container and Loading Research and Development Laboratory, in Chicago, will be held April 26-30, inclusive, under personal supervision of C. R. Anderson, chief of the laboratory.

The art and science of container construction, interior packing, cushioning, and closing and reinforcement of containers, as well as the stowing and bracing of freight in railroad cars, will be discussed during the five-day lecture program, which also will include laboratory demonstrations. Particular emphasis will be placed on careful handling of cars and demonstrations will point out effects of impacts at different speeds.

A shipper-carrier forum will highlight the **American Short Line Railroad Association's** western regional meeting in Milwaukee, April 28 and 29. Speakers will include J. M. Hood, association president; H. J. Phillips, traffic manager, Chicago North Shore & Milwaukee; H. T. Reed, director of traffic, Line Material Company; C. E. Huntley, secretary-treasurer of the association; and W. R. Grimm, its western traffic manager. The **Milwaukee Traffic Club** and the **Transportation Club of Milwaukee** will also participate in the forum.

Transport Topics Form Lecture Series

Hauling truck trailers on railroad flat cars will be one subject in a

N.Y. RR CLUB ANNOUNCES SIXTH ESSAY CONTEST

The New York Railroad Club has announced its sixth consecutive yearly essay contest, in which there will be a \$750 first prize, \$500 second prize and \$250 third prize. Closing date of the contest is next October 1. Essays and inquiries should be addressed to C. T. Stansfield, executive secretary of the club, 30 Church street, New York 7.

Suggested subjects, for all contestants except college students, are: 1—What specific changes in railroad rates, service, handling or equipment are needed to maximize volume of railroad traffic and net earnings—how and why? 2—Modern techniques—what contributions can they make (and how) to maximum efficiency and economy in maintenance of equipment, maintenance of way, stores, or accounting departments?

For college students only, the suggested topic is: How does the intrinsic economy of railroad transportation compare with that of other agencies, and what steps are necessary (on the part of railroads and/or public authorities) to secure for railroads that part of the nation's transportation work they are naturally best fitted to perform?

Contestants are not limited to the suggested topics; but if they wish to submit an essay on another subject they should first obtain approval from the contest committee.

cussed on April 14 use of helicopters in metropolitan areas. Monorail systems for rapid transit will be the subject of the April 27 lecture by E. H. Anson, senior vice-president of Gibbs & Hill, New York City consulting engineers. D. S. Sundel, manager of the New Haven's trailers-on-flat-cars service between Boston and New York, will speak on May 11. The final lecture, on May 26, will have as its subject the use of conveyors for passenger transportation. No speaker has yet been chosen for this last lecture.

Equipment & Supplies

FREIGHT CARS

4,823 Freight Cars Delivered in March

New freight cars delivered in March for domestic use totaled 4,823, compared with 3,974 in February and 6,679 in March 1953, the American Railway Car Institute and the Association of American Railroads have announced jointly.

Orders for 348 new freight cars were placed in March, the announcement added, and the backlog of cars on order and undelivered on April 1 amounted to 20,996, compared with 25,441 on March 1. A breakdown by type of cars ordered and delivered in March, and of cars on order April 1, follows:

Type	Ordered Mar. '54	Delivered Mar. '54	On Order & Undelivered April 1, '54
Box-Plain	10	1,224	8,010
Box-Auto	0	0	1,000
Flat	35	324	1,198
Gondola	42	1,048	978
Hopper	1	828	1,600
Covered Hopper	0	753	1,349
Refrigerator	0	231	4,033
Tank	235	343	2,646
Caboose	0	15	70
Other	25	57	62
TOTAL	348	4,823	20,996
Car Builders	251	3,793	8,769
Company Shops	97	1,030	12,197

The **Aliquippa & Southern** has ordered 42 100-ton gondola cars from its own shops at an estimated cost of \$210,000. Construction is expected to be completed this year.

The **Chicago & Eastern Illinois** has ordered 10 50-ton 50-ft box cars from the Pullman-Standard Car Manufacturing Company at an estimated cost of \$7,750 each. Delivery is scheduled for this month.

The **Fruit Growers Express Company** has ordered 100 50-ft 70-ton all-purpose mechanical refrigerator cars from its own shops. Construction is expected to begin in January 1955.

PASSENGER CARS

The **Missouri-Kansas-Texas** has ordered one 72-passenger stainless



THE GASPE REGION OF QUEBEC was the subject of a recent program originating from a Baltimore television station. Discussing the scenic vacation spot are, left to right: Arthur P. Lait, Canadian National assistant general passenger traffic manager; Joe Fountain, CNR public relations officer; and Bob Cavanaugh, producer of the program.

NEW ORLEANS TO DEDICATE ITS UNION STATION MAY 1

Formal dedication of its new \$16-million Union Passenger Terminal will be marked by the city of New Orleans with a weekend of celebration on April 30 and May 1. The terminal will share the spotlight with the city's mayoral inauguration under a new home rule city charter, in what has been described as a "double-header civic celebration."

The Railroad Hour of April 26 will salute New Orleans and the forthcoming dedication of the new terminal. On April 30, the Association of Southeastern Railroads will hold a meeting in the Union Station building at 9 a.m. The regular monthly meeting of the Association of American Railroads will follow at 10 a.m., in the conference room of the new terminal building, where AAR president W. T. Faricy will preside.

An exhibit of the latest types of railroad passenger equipment, provided by all roads using the new terminal, will be open to all visitors inspecting the terminal on May 1. Formal dedication ceremonies will take place at 10 a.m., with Mr. Faricy as principal speaker. William G. Zetzmann, chairman of the New

Orleans Railroad Terminal board, will preside.

At 11 a.m. a parade will form at the station and proceed to the city hall for inauguration of the mayor and city council. A civic banquet and ball will be held in the Roosevelt Hotel, starting at 7 p.m. The dinner will honor members of the terminal board and others who have contributed to the new terminal and its attendant grade separation program. Mayor deLesseps S. Morrison will serve as toastmaster, and will introduce presidents of railroads serving New Orleans, members of the AAR board of directors, and a host of civic leaders from other cities.

Mayor Morrison has termed the terminal project a program "providing our city with an entirely new transportation system and the means of accomplishing many needed public improvements which would not otherwise have been possible."

Railway Age will devote its April 26 issue to a comprehensive description of this important new passenger facility, which has been termed "the end product of the city's \$57-million public improvement program."

steel coach from the Pullman-Standard Car Manufacturing Company. Delivery is scheduled for May.

Securities

Dividends Declared

LOUISVILLE & NASHVILLE.—\$1, quarterly, payable June 11 to holders of record May 3.

NORTHERN (New Hampshire).—\$1.50, quarterly, payable April 30 to holders of record April 15.

WESTERN PACIFIC.—common, 75¢, quarterly, payable May 17 to holders of record May 3; 5% preferred A, \$1.25, quarterly, payable May 17, August 16, November 15, 1954, and February 15, 1955, to holders of record May 3, August 2, November 1, 1954, and February 1, 1955, respectively.

Security Price Averages

	April 13	Prev. Week	Last Year
Average price of 20 representative railway stocks	62.50	60.41	65.30
Average price of 20 representative railway bonds	94.79	94.47	93.83

Labor & Wages

Agreement Reached; C&IM Strike Is Over

Members of the Brotherhood of Locomotive Firemen & Enginemen returned to their jobs on the Chicago & Illinois Midland at 6 a.m. April 11

after having tied up all operations of the 130-mile road since 10 p.m. April 5 (*Railway Age*, April 12, page 12).

The walkout stemmed from a two-fold dispute. One portion involved the difference in mileage regulation provisions of the firemen's contract and the engineers' contract. C&IM President F. L. Schrader said at the time of the walkout that the road was willing to accept any reasonable rule to which firemen and engineers could agree. Final settlement, he said was "on a basis urged . . . for many months."

NYC CREATES TWO NEW PASSENGER POSTS; RAILWAY AGE EDITOR GETS ONE

As part of its continuing program to improve its passenger services, the New York Central has created two new offices—passenger traffic research and passenger station services. The new activities will be headed, respectively, by John S. Gallagher, Jr., who leaves the editorial staff of *Railway Age* to take the new position, and William J. Leonard.

Effective May 1, Mr. Gallagher's former duties as transportation editor of *Railway Age* at Chicago, will be assumed by Joe W. Kizzia, who has been a member of *Railway Age*'s Washington bureau since 1949.

In his position as manager of passenger traffic research for the NYC, Mr. Gallagher will direct and carry out studies looking to greater devel-

The other phase of the dispute involved routine grievances and time claims. The brotherhood has agreed to allow these to be submitted to arbitration and has further agreed that the arbiter's decision will be final and binding. Mr. Schrader indicated this was a step the union had been previously unwilling to take.

"Carriers Haven't Violated Firemen Diesel Agreements"

The six-man arbitration board has rendered its opinion in the long-standing dispute of the Brotherhood of Locomotive Firemen & Enginemen as to duties of a fireman on multiple-unit diesel-electric locomotives. The union has contended that presence of other personnel on locomotives of high-speed passenger trains is in violation of its agreements; that supervisory officers, diesel experts, electricians and others have been performing work "customarily done by firemen-helpers" in engine rooms while trains were in motion and while the firemen-helper is at his watching post in the cab, and that if additional firemen-helpers were required to perform work "customary" to their craft, they should be taken from the ranks of firemen.

The board, in its award, stated that "the carriers have not violated regional diesel agreements except as otherwise indicated in our opinion and findings." A quick check of the detailed opinion and findings, released just at press time for this issue, indicated no specific violations were mentioned.

"Firemen do not have exclusive right to perform engine-room work on diesel locomotives," the board said. The report itself amplified this statement when it said: "The contention that firemen had craft rights to all work necessary to production of power is not a valid one. The term 'production

opment of passenger market potential and the Central's integration into those markets. Mr. Leonard, as manager of passenger station services, will be concerned primarily with ticket office and reservation bureau matters.

Mr. Gallagher, born at Waterloo, Iowa, and graduated from Antioch College, has served with the Atlantic Coast Line, the Florida East Coast, and the New Haven, and has done consulting work in the passenger field for other railroads. He has been transportation editor of *Railway Age* at Chicago, since September 1950.

Mr. Leonard, a native of Yonkers, N.Y., has been with the NYC since 1910. His most recent position, to which he was appointed in 1946, was district station accountant.

of power' was never employed in connection with the firemen's work on steam locomotives. It appears to have been coined after the coming of the diesel in an attempt to gain rights on the new type of power. The evidence shows, we think, the change from steam to diesel power left little or nothing for firemen to do. The attempt of the organization to make it appear that duties of a fireman on the steam locomotive can be traced into the engine room of a diesel simply cannot be accepted. . . . The rights of the firemen on the diesel are contractual, not traditional."

As to the presence of other employees in locomotives, the board stated: "Diesel maintainers, instructors and supervisory officers may perform operational duties incident to their work. They may not be assigned to an operational position on a diesel locomotive in lieu of a fireman. A job which consists of work customarily performed by firemen is a fireman's job.

"The carriers have the unrestricted right to determine when an additional employee shall be assigned to a multiple-unit diesel locomotive in service to which the watching rule applies. If he is assigned to perform work customarily performed by firemen, he is to be taken from the seniority ranks of firemen."



BALTIMORE & OHIO.—Alfred L. Jordan, chief signal inspector, has been appointed signal engineer at Baltimore, succeeding the late W. W. Welsh (*Railway Age*, March 29).

has been elected chairman, with headquarters as before at Philadelphia. E. L. Keister, former president of the Atlantic & Danville, has been elected president of the TC. Leo Nielson has been elected vice-president and treasurer, succeeding P. D. Houston, Sr., retired.

CANADIAN NATIONAL.—Herbert B. Parr has been appointed assistant general freight traffic manager at Montreal. Harold A. Simons, assistant general manager of the sleeping, dining and parlor car department at Montreal, has been appointed general manager of that department, succeeding Mr. Parr.

CANADIAN PACIFIC. — D. M. Dunlop, superintendent at Moose Jaw, Sask., has been transferred to Kenora, Ont., to succeed R. C. Wheeler, who retired March 31. Named to replace Mr. Dunlop is K. R. Perry, assistant

superintendent at Kenora. D. Whittier, roadmaster at Winnipeg, has been appointed assistant superintendent at Prince Albert, Sask., succeeding W. H. McMurray, retired.

D. F. Crawford has been appointed assistant to superintendent transportation at Winnipeg.

A. R. Miller has been appointed foreign freight agent at Boston, Mass.

NEW YORK CENTRAL.—E. J. Bayer, district engineer, and E. H. McGovern, engineer maintenance of way, Big Four district at Cincinnati, have been transferred to Indianapolis.

Roy A. Gall, disbursement accountant at New York, has been appointed auditor of expenditures, succeeding Robert Duff Murray, who has retired after 34 years' service.

R. A. Carpenter, chief road foreman of engines of the electrical equipment department, has been named district road foreman on the general manager's staff at New York. D. R. Patridge, road foreman of engines, has been appointed chief road foreman of engines, with jurisdiction over the Electric, Harlem, Putnam and River divisions and the New York Terminal district.

F. T. Kingston has been appointed assistant industrial engineer—equipment at New York, succeeding T. E. Wilder, promoted.

NORTHERN PACIFIC. — C. T. DeWitt, superintendent of safety at St. Paul, has been appointed superintendent of safety and fire prevention at that point. Named as assistant superintendents of the safety and fire prevention department are R. T. Boyd at St. Paul, D. M. Smith at Livingston, Mont., C. E. Flynn at Spokane, Wash., and J. J. Schmidt at Seattle.

C. L. Harding, trainmaster at Jamestown, N.D., has been promoted to assistant superintendent at Duluth, Minn., succeeding G. M. Hare, who has been named chief of personnel at St. Paul to replace the late H. W. McCauley. R. E. Schuett, trainmaster-roadmaster at Bemidji, Minn., replaces Mr. Harding, while E. M. Overlie, division roadmaster at Duluth, succeeds Mr. Schuett.

C. W. Hemsworth, chief draftsman, has been promoted to assistant to general mechanical superintendent at St. Paul, succeeding W. R. Van Housen, who retired April 1. Named as general car service agent at St. Paul is A. H. Marty, traveling car service agent, who replaces F. P. Shields, retired.

OBITUARY

Julius Johnson, vice-president, comptroller and treasurer of the Midland Continental at Jamestown, N.D., died March 24.

Frederick O. Stafford, retired freight traffic manager of the New York Central, died April 12 at Los Angeles.

Railway Officers

Armstrong Succeeds Stanley as TC Chairman

H. W. Stanley, chairman of the board and president of the Tennessee Central at Nashville, Tenn., has retired from active service but will continue as a member of the board. J. Lewis Armstrong, senior vice-president,

"SCOTCHLITE" STICKERS measuring 3½ inches square were mailed to each of the Great Northern's 28,000 employees with paychecks distributed late in March. Many of the stickers, which have a bright red field with white and black lettering, have found their way onto employees' automobiles, where the reflective material shows up brilliantly under approaching headlights. The stickers were accompanied by a letter from President John M. Budd commanding employees for their top record of on-the-job safety during 1953.



The president of a large Eastern railroad observed recently, in a talk with a group of employees, that the dollar paid on a damage claim is not actually what matters most; it is the good will that is lost when banged-up lading arrives at destination. "The shipper," he remarked, "is not in business to collect on loss and damage claims. He is in business to sell merchandise, and merchandise delivered in good condition is the most saleable."

Right now this statement is particularly significant. April, the annual Perfect Shipping Month, has just passed the halfway mark, and it appears that carriers and shippers alike are showing renewed awareness of the loss and damage problem. Eighteen annual "Perfect Shipping" campaigns, dating back to the thirties, have generated a lot of interest in the question of how to cut loss and damage claims paid by the railroads. But the work still is far from finished.

Figures just released by the AAR's Freight Loss and Damage Prevention Section show that total claims in 1953 amounted to \$111,400,066. In spite of many and varied efforts to improve the situation, this 1953 dollar total was 3.4 per cent higher than in 1952. New claims totaled 3,523,508, a drop of 1.5 per cent. Thus, while fewer shipments were being damaged in 1953, the damage was more serious, either in degree or in value of cargo affected.

What is the key to reduction of loss and damage claims? *Railway Freight Traffic* magazine conducted a poll on this subject and found railroad men and industrial traffic men in some disagreement. The RFT survey posed three "factors"—more education for rank and file personnel of shippers and carriers; closer cooperation between receiver and shipper in reporting condition of goods on arrival; and tougher policy of carrier agents in accepting shipments. The problem was to select the single "factor" which would do most to reduce loss and damage claims in the future.

Of the more than 150 railroad men who participated in the poll, 64.1 per cent said the answer lay in closer shipper-receiver cooperation in reporting condition of goods on arrival. Industrial traffic men disagreed. They gave top rating, by 60.1 per cent, to "more extensive education," and relegated the closer cooperation item to third place.

The RFT poll pointed up the wide difference of opinion that exists on how to lick the loss and damage problem. The approach by carriers and shippers has been fully cooperative, however, and suggestions from all sides have been welcomed. Prevention of loss and damage is a continuing struggle, and Perfect Shipping Month serves, among other things, as a sort of rededication.

This year's program, sponsored as usual by the railroads and the National Association of Shippers Advisory Boards, has called for a round of special meetings in various shipper board districts. Nine such meetings were on the docket for March and April, giving specific attention to loss and damage prevention. Meanwhile, R. C. Avery, chairman of the National Management Committee and leader of this year's perfect shipping campaign, has emphasized the need to "re-tell and re-emphasize" careful freight handling for these



THIS "PERFECT SHIPPING TRAIN" of the Union Pacific, operated in cooperation with two shippers advisory boards, is on a 7-state tour throughout April and early May. Next to the "theater car" (where motion pictures are shown during exhibit hours) is the UP's effective Plexiglas damage demonstration car.

'Perfect Shipping' = Good Will

persons new in transportation. He has spelled out the need for "cooperative effort and widely extended publicity" in putting over the 1954 program. Railroads are cooperating, and the main message on a recent "Railroad Hour" broadcast carried the perfect shipping story to the general public.

Freight claim prevention is a matter near and dear to all railroads because, as the Eastern president said, it affects customer good will and it affects the pocket-book. A survey of representative railroads, conducted a few weeks ago, showed that practically all roads have loss and damage prevention departments which carry on year-round programs. In addition, they put on special drives during Perfect Shipping Month.

Activities for educating employees, for building interest and enthusiasm, are widely used. Car coupling speed tests are conducted for yard men, clinics and meetings are held for officers and employees, and films are circulated on loss and damage prevention. Bulletins and posters help tell the story. So do special articles in company publications.

Most carriers covered by the recent survey have "auditorium cars," traveling classrooms which can take the perfect shipping story over an entire system. Contests between different yards are encouraged to arouse interest in careful car handling; and impact recorders frequently are used to ferret out rough spots in car handling. The Union Pacific this year decided to run a 13-car special train over its system to demonstrate to employees how to stow, block, brace, strap and unload almost any commodity. The train includes samples of the latest freight car types carrying exhibits to demonstrate freight loss and damage prevention. It is staffed with packaging and loading specialists and engineers of the UP's general claims department, the AAR, Pacific Fruit Express and various equipment manufacturers who demonstrate perfect shipping techniques to visitors.

Freight Operating Statistics of Large Railways — Selected Items

Region, Road and Year	Miles of road operated	Locomotive-Miles			Car-Miles			Ton-miles (thousands)			Road locos. on line		
		Principal & helper	Light	Train-miles	Loaded (thous.)	Per cent loaded	Gross, exclcos.	Net, rev. and non-rev.	Unatored	Serviceable stored	B.O.	Per cent B.O.	
New Eng. Region	Boston & Maine.....1954	1,665	246,291	251,667	9,370	9.27%	65.5	604,047	236,068	75	1	4	5.0
	1953	1,668	267,096	273,743	11,841	10,110	66.3	648,466	255,515	92	4	14	12.7
	N. Y., N. H. & Hfd.....1954	1,748	275,755	275,774	20,340	16,697	66.4	682,969	251,299	88	..	6	6.4
	1953	1,764	302,513	302,971	20,292	11,504	70.3	710,622	303,029	88	..	4	4.3
Delaware & Hudson.....1954	793	192,943	198,729	11,069	9,073	65.0	642,417	319,896	41	..	2	4.7	
	1953	793	209,640	216,119	12,339	9,708	66.7	680,485	342,417	48	22	8	10.3
Del., Lack. & Western.....1954	962	263,957	278,900	21,292	11,267	66.9	738,651	318,241	62	..	3	4.6	
	1953	962	276,690	292,141	23,762	12,745	66.6	817,803	361,419	68	4	2	2.7
Erie.....1954	2,224	518,515	522,053	22,968	8,231	68.3	1,754,625	696,925	168	..	1	..	..
	1953	2,237	565,616	570,389	23,191	32,427	69.3	1,986,409	817,119	170	..	2	1.2
Grand Trunk Western.....1954	952	256,229	262,445	2,066	8,237	60.1	583,453	240,288	67	3	9	11.4	
	1953	952	266,814	272,105	2,493	8,692	60.6	616,529	261,784	70	2	6	7.7
Lehigh Valley.....1954	1,150	209,086	212,270	9,163	10,127	67.4	651,697	284,888	36	3	1	2.9	
	1953	1,202	215,112	218,695	7,182	10,890	68.7	713,796	327,515	33	..	1	..
New York Central.....1954	10,663	2,426,625	2,470,752	104,910	94,446	59.6	6,794,274	2,934,490	638	87	138	16.0	
	1953	10,666	2,736,505	2,813,292	111,212	104,712	59.6	7,621,973	3,283,827	792	70	209	19.5
New York, Chic. & St. L.....1954	2,161	686,771	707,139	6,781	26,671	61.1	1,894,190	771,533	177	39	31	12.6	
	1953	2,160	719,509	813,820	8,283	31,085	65.0	2,182,538	919,785	202	4	42	16.9
Pitts. & Lake Erie.....1954	221	60,128	60,659	..	2,467	60.9	218,137	128,974	17	11	6	17.6	
	1953	221	81,964	84,160	153	3,377	61.3	296,521	175,224	35	5	6	13.0
Wabash.....1954	2,381	514,828	516,162	6,814	22,249	63.7	1,427,114	544,333	107	..	..	..
	1953	2,381	492,782	495,476	8,073	21,761	67.9	1,385,093	558,742	108	31	31	18.2
Baltimore & Ohio.....1954	6,077	1,448,952	1,591,688	167,010	53,406	57.3	4,292,016	1,987,736	463	86	115	17.3	
	1953	6,081	1,610,821	1,790,881	161,040	63,493	62.6	4,764,568	2,281,741	546	42	136	16.8
Hessey & Lake Erie.....1954	209	43,319	43,330	196	1,523	61.0	162,566	99,061	12	3	1	6.3	
	1953	211	42,916	43,139	250	1,775	57.5	185,304	110,975	11	27	4	9.5
Central of New Jersey.....1954	614	122,969	127,340	9,654	4,683	64.8	358,327	187,751	67	..	14	16.9	
	1953	617	134,260	120,564	12,541	5,094	65.5	382,552	202,572	72	2	5	6.3
Chicago & Eastern Ill.....1954	868	118,017	118,017	2,561	4,653	62.7	327,515	157,740	24	..	2	7.7	
	1953	868	130,041	130,041	2,698	5,001	65.1	338,685	158,953	25	..	2	7.4
Elgin, Joliet & Eastern.....1954	236	88,036	88,331	..	2,666	62.9	213,234	112,610	35	5	1	2.4	
	1953	236	103,263	104,063	..	3,406	64.0	268,913	143,138	41	..	..	..
Pennsylvania System.....1954	9,906	2,571,878	2,751,770	228,312	105,682	61.5	7,616,171	3,392,338	814	324	357	23.9	
	1953	9,945	3,006,242	3,213,901	268,670	121,283	62.6	8,744,020	4,006,234	1,033	78	386	25.8
Reading.....1954	1,301	322,597	328,949	14,767	12,103	60.6	968,507	496,561	182	35	14	6.1	
	1953	1,310	386,347	392,534	20,058	14,029	60.9	1,149,978	601,966	167	14	22	10.8
Western Maryland.....1954	857	157,104	168,900	12,596	6,013	63.5	4,247,263	277,838	69	20	2	2.2	
	1953	873	198,612	226,432	25,323	6,891	63.9	569,659	322,177	121	7	5	3.8
Chesapeake & Ohio.....1954	5,023	1,193,584	1,215,999	31,221	48,026	56.2	4,057,810	2,167,773	364	111	145	23.4	
	1953	5,036	1,287,701	1,321,605	39,615	56,943	62.6	5,478,403	2,633,685	401	68	181	27.8
Norfolk & Western.....1954	2,113	611,662	646,718	43,044	27,067	58.4	2,399,677	1,270,555	223	31	23	8.3	
	1953	2,113	659,295	697,666	49,534	30,123	60.0	2,625,796	1,400,080	228	29	22	7.9
Atlantic Coast Line.....1954	5,354	785,602	785,605	9,055	25,993	59.0	1,882,268	823,803	239	..	6	2.4	
	1953	5,367	883,232	883,288	10,909	28,676	61.9	2,031,899	924,661	249	..	..	..
Central of Georgia.....1954	1,754	190,704	190,730	2,141	7,238	67.4	494,335	233,507	71	..	1	1.4	
	1953	1,754	207,954	216,255	3,179	7,917	68.7	535,433	252,585	76	12	..	..
Gulf, Mobile & Ohio.....1954	2,718	289,151	289,151	269	15,770	65.5	1,087,722	496,886	82	..	7	7.9	
	1953	2,718	321,630	321,630	287	16,815	69.7	1,117,722	527,646	79	..	10	11.2
Illinois Central.....1954	6,537	1,388,614	1,391,162	47,309	50,008	62.2	3,610,983	1,641,585	509	45	87	13.6	
	1953	6,539	1,599,221	1,604,495	53,974	53,344	63.6	3,860,920	1,784,652	568	2	61	9.7
Louisville & Nashville.....1954	6,728	931,067	970,760	19,595	32,792	62.8	2,448,844	1,234,168	246	40	72	20.1	
	1953	6,728	1,001,850	1,055,166	25,509	35,318	65.5	2,569,515	1,283,510	250	38	55	16.0
Nash., Chatt. & St. Louis.....1954	1,032	184,811	190,078	4,290	6,106	66.6	410,855	188,069	50	..	3	5.7	
	1953	1,032	206,556	204,433	3,619	6,559	71.3	424,224	199,980	50	..	3	5.7
Seaboard Air Line.....1954	4,067	628,183	628,183	1,835	25,197	62.0	1,832,929	801,482	142	..	6	4.1	
	1953	4,070	691,910	691,910	2,935	26,755	62.1	1,924,250	850,898	155	62	4	1.8
Southern.....1954	6,262	932,957	933,014	11,746	39,186	66.1	2,575,794	1,154,837	257	5	5	1.9	
	1953	6,263	1,035,941	1,035,981	13,291	40,825	62.6	2,616,593	1,182,663	252	28	18	6.0
Chicago & North Western.....1954	7,850	649,589	651,803	12,756	27,198	64.3	1,849,738	843,138	181	43	86	27.7	
	1953	7,849	726,648	730,727	15,546	29,682	65.1	2,022,466	920,142	253	53	96	23.9
Chicago Great Western.....1954	1,435	133,690	133,690	216	7,326	65.4	49,027	22,449	32	..	1	3.0	
	1953	1,435	112,747	112,924	695	6,442	66.7	42,934	21,179	31	..	3	8.8
Chi., Milw., St. P. & Pac.....1954	10,631	957,356	976,999	26,359	37,739	64.5	2,552,791	1,117,844	345	63	53	11.5	
	1953	10,662	1,045,923	1,077,494	37,484	43,437	66.2	2,900,480	1,300,853	349	100	60	11.8
Chi., St. P., Minn. & Omaha.....1954	1,666	164,858	166,562	5,560	5,149	61.7	369,771	156,398	54	7	22	26.5	
	1953	1,666	186,035	188,065	6,762	5,743	67.6	390,246	175,190	64	..	25	28.1
Duluth, Missabe & Iron Range.....1954	569	37,294	37,754	656	599	54.5	46,009	22,006	28	29	30	34.5	
	1953	567	36,581	37,111	778	730	56.5	60,022	29,715	28	23	29	29.9
Great Northern.....1954	8,291	1,037,381	1,043,254	35,014	33,732	66.5	2,357,988	1,071,675	295	137	41	8.7	
	1953	8,291	1,063,031	1,065,368	37,100	37,468	70.4	2,517,923	1,174,964	294	160	63	12.4
Minnep., St. P. & S. M. ....1954	4,169	368,061	369,895	3,813	10,482	68.7	655,887	307,019	91	11	14	12.1	
	1953	4,172	391,643	395,926	3,592	11,914	67.4	769,697	354,193	108	5	12	9.6
Northern Pacific.....1954	6,576	805,776	829,574	34,413	28,490	67.6	1,963,838	881,320	320	34	66	15.7	
	1953	6,585	810,301	837,833	29,969	31,036	68.3	2,142,531	992,363	311	32</		

For the Month of January 1954 Compared with January 1953

Region, Road and Year	Freight cars on line			G.t.m.per train-hr.	G.t.m.per train-min.	Net ton-mi.	Net ton-mi.	Car-miles per car-day	Net ton-mi. daily	Train-miles per train-hour	Miles per load			
	Home	Foreign	Total	Per cent B.O.	and tenders	and tenders	per train-mile	per car-mile	per car-day	per train-day	per day			
New Eng. Region	Boston & Maine.....	1954 2,543	7,732	10,275	2.9	40,067	2,458	561	25.4	781	46.9	4,574	16.3	115.2
	1953 1,690	9,962	9,652	3.0	10,692	2,433	559	25.3	525	51.7	4,941	16.8	97.1	
	1954 2,885	13,443	16,328	2.1	40,997	2,477	911	23.5	525	33.7	4,638	16.6	122.6	
	1953 2,162	12,561	11,723	2.2	36,896	2,350	1,002	26.3	657	35.5	5,541	15.7	124.1	
Delaware & Hudson.....	1954 6,693	4,009	10,702	6.2	61,084	3,348	1,667	35.3	931	40.7	13,013	18.3	167.4	
	1953 6,381	4,682	11,063	5.5	64,263	3,265	1,643	35.3	987	41.9	13,929	19.8	90.2	
Del., Lack. & Western.....	1954 8,031	8,788	16,819	3.7	49,647	2,844	1,225	28.2	605	32.1	10,671	17.7	165.5	
Erie.....	1954 6,799	9,018	15,817	4.3	52,680	3,004	1,327	29.4	735	38.9	12,119	17.8	144.1	
1954 12,089	13,000	25,089	4.5	63,267	3,410	1,355	24.4	873	52.3	10,109	18.7	114.7		
1953 10,684	18,207	28,891	3.4	64,567	3,545	1,458	25.2	928	53.1	11,783	16.4	121.8		
Grand Trunk Western.....	1954 3,891	8,190	12,384	4.2	48,812	2,294	945	29.2	663	37.8	8,142	21.4	117.4	
1953 3,567	8,593	12,160	4.3	47,664	2,328	988	30.1	693	38.0	8,870	20.6	124.2		
Lehigh Valley.....	1954 8,684	7,369	16,053	4.9	65,511	3,153	1,378	28.1	571	30.1	7,991	20.9	223.1	
New York Central.....	1954 93,265	73,223	166,624	9.8	49,299	2,846	1,229	31.1	589	31.8	8,878	17.6	107.4	
New York, Chic. & St. L.....	1954 74,806	81,808	156,624	8.0	48,094	2,834	1,221	31.4	681	36.4	9,930	17.3	98.9	
Pitts. & Lake Erie.....	1954 8,917	6,137	15,054	1.7	57,617	3,630	2,146	52.3	278	8.8	18,826	15.9	63.5	
1953 4,500	9,509	14,009	5.4	52,426	3,619	2,139	51.9	396	12.5	25,576	14.5	62.5		
Wabash.....	1954 9,490	10,751	20,241	8.3	65,545	2,789	1,064	24.5	886	55.1	7,375	23.6	143.3	
1953 8,164	11,337	19,501	8.6	61,866	2,831	1,142	25.7	954	54.8	7,579	23.1	103.5		
Baltimore & Ohio.....	1954 56,424	38,208	94,632	5.7	47,079	2,997	1,388	37.2	667	31.2	10,551	15.9	91.6	
1953 57,341	41,402	98,743	7.2	44,055	2,989	1,431	35.9	755	33.6	12,104	14.9	90.9		
Bessemer & Lake Erie.....	1954 8,110	455	8,595	10.2	64,078	3,933	2,397	65.0	368	9.3	15,290	17.1	95.5	
Central of New Jersey.....	1954 8,100	1,213	9,313	5.9	66,897	4,531	2,714	62.5	380	10.6	16,986	15.5	41.2	
Chicago & Eastern Ill.....	1954 4,924	8,539	13,463	10.8	40,961	3,061	1,604	40.1	450	17.3	9,864	14.1	74.2	
1953 4,508	9,664	14,172	8.1	39,499	3,015	1,597	39.8	446	17.2	10,591	13.9	86.5		
Elgin, Joliet & Eastern.....	1954 7,115	8,657	15,772	5.6	44,267	2,623	1,231	31.8	753	36.4	5,997	17.0	162.6	
Pennsylvania System.....	1954 109,824	94,881	204,705	8.1	52,946	3,052	1,359	32.1	534	27.0	11,047	17.9	70.7	
Reading.....	1954 106,182	94,653	200,835	9.1	49,704	2,983	1,367	33.0	645	31.2	12,995	17.1	83.2	
Western Maryland.....	1954 19,153	14,934	34,091	5.3	42,780	3,004	1,540	41.0	462	18.6	12,312	14.2	59.7	
Chesapeake & Ohio.....	1954 56,902	18,382	75,284	3.6	64,152	3,415	1,824	45.1	907	35.7	13,922	18.9	71.1	
Norfolk & Western.....	1954 51,466	21,953	76,419	3.1	69,630	5,805	2,070	46.6	1,130	43.2	16,998	18.4	73.5	
Atlantic Coast Line.....	1954 21,470	14,883	36,353	2.0	41,210	2,411	1,055	31.7	717	33.3	4,963	17.2	116.4	
1953 17,143	19,205	36,648	2.1	38,739	2,319	1,055	32.8	805	40.4	5,558	16.8	114.9		
Central of Georgia.....	1954 4,119	5,050	9,169	2.6	46,513	2,602	1,229	32.3	876	40.3	4,294	17.9	96.5	
Gulf, Mobile & Ohio.....	1954 5,503	6,619	9,500	4.2	44,511	2,590	1,222	31.9	905	41.7	4,645	17.3	86.9	
Illinois Central.....	1954 3,485	9,878	14,363	3.1	70,965	3,490	1,647	31.4	1,186	51.2	6,262	20.4	124.4	
Duluth, Missabe & Iron Range.....	1954 21,470	21,298	53,966	3.0	44,910	2,640	1,200	32.8	981	48.0	8,101	17.3	78.1	
1953 26,561	26,627	52,588	1.6	42,101	2,455	1,135	33.5	1,069	50.6	8,804	17.4	89.7		
Louisville & Nashville.....	1954 37,717	12,172	49,889	2.9	46,129	2,638	1,330	37.6	781	33.9	8,420	17.5	190.9	
1953 36,644	15,901	52,545	2.6	42,306	2,569	1,283	36.3	793	34.2	8,757	16.5	111.7		
Nash., Chatt. & St. Louis.....	1954 4,312	3,770	8,082	1.9	44,678	2,226	1,019	30.8	771	37.6	5,879	20.1	126.6	
Seaboard Air Line.....	1954 14,008	13,794	27,799	2.4	53,618	2,958	1,294	31.8	934	47.4	6,357	18.3	161.5	
1953 12,049	16,022	28,071	2.5	50,927	2,821	1,247	31.8	971	48.4	6,744	18.3	118.1		
Southern.....	1954 20,691	22,354	42,955	3.0	48,213	2,775	1,244	29.5	880	45.2	5,949	17.5	134.8	
1953 16,727	27,575	44,302	3.5	43,370	2,545	1,150	29.0	874	44.1	6,091	17.2	124.3		
Chicago & North Western.....	1954 21,942	24,764	46,706	5.8	49,530	2,913	1,328	31.0	590	29.6	3,465	17.4	76.4	
1953 18,855	27,026	45,881	4.4	48,292	2,869	1,305	31.0	636	31.5	3,782	17.4	65.3		
Chicago Great Western.....	1954 2,355	3,643	5,995	3.5	72,211	3,731	1,618	29.4	1,178	61.3	4,843	19.4	136.8	
1953 1,419	6,238	7,657	2.4	69,829	3,794	1,884	27.7	876	44.8	4,749	18.4	112.8		
Chic., Milw., St. P. & Pac.....	1954 36,572	26,914	63,486	5.6	48,455	2,680	1,174	29.6	564	29.5	3,392	18.2	78.4	
1953 34,332	31,670	66,002	3.2	52,442	2,780	1,251	29.9	631	31.9	3,936	17.5	76.5		
Chic., St. P., Minn. & Omaha.....	1954 1,195	7,149	8,344	5.1	34,506	2,266	958	30.4	615	32.8	3,141	15.4	75.8	
1953 1,213	7,638	8,851	3.2	32,813	2,184	980	30.5	651	31.6	3,519	15.6	76.9		
Duluth, Missabe & Iron Range.....	1954 14,869	732	15,601	3.4	19,299	1,322	632	36.7	46	2.3	1,248	15.6	17.6	
1953 12,668	765	13,433	3.6	21,076	1,745	864	40.7	72	3.1	1,691	14.7	20.4		
Great Northern.....	1954 26,606	18,990	45,596	4.3	40,118	2,299	1,045	31.8	787	37.3	4,169	17.6	78.6	
1953 23,918	16,647	40,565	5.4	43,139	2,391	1,116	31.4	896	40.6	4,571	18.2	75.5		
Minneapolis, St. P. & S. S. M.....	1954 7,344	6,542	13,886	6.3	36,449	1,817	838	29.3	722	35.9	2,376	20.1	110.5	
1953 6,203	8,787	14,990	5.5	36,829	1,973	908	29.7	808	40.3	2,739	20.3	111.4		
Northern Pacific.....	1954 23,771	12,848	36,619	5.6	44,571	2,450	1,102	30.9	765	48.0	4,327	18.3	72.0	
1953 20,208	15,644	35,852	4.3	48,366	2,665	1,235	32.0	875	40.1	4,861	18.3	75.8		
Aitch., Top. & S. Fe (incl. G. C. & S. F. & P. & S. F.)	1954 56,937	35,340	92,277	2.6	69,821	2,936	1,119	26.0	885	54.0	6,133	23.8	109.0	
1953 50,904	30,878	81,862	4.0	56,635	2,869	1,113	26.2	1,084	64.5	6,957	23.0	114.4		
Chic., Burd. & Quincy.....	1954 21,859	21,120	42,979	3.1	56,970	2,761	1,214	29.8	1,009	52.6	4,984	20.6	99.5	
1953 18,129	24,659	42,788	3.3	58,743	2,825	1,206	29.8	1,062	55.2	5,217	20.8	88.3		
Chic., Rock I. & Pac.....	1954 13,404	20,692	34,096	3.6	55,367	2,772	1,117	28.8	926	53.1	4,039	20.0	165.6	
1953 14,164	21,413	35,577	3.2	53,499	2,762	1,131	28.4	1,030	57.6	4,622	19.1	145.5		
Denver & R. G. Wn.....	1954 4,335	4,286	12,621	3.0	60,514	3,301	1,588	33.3	992	42.6	5,863	18.4	67.7	
1953 7,768	7,435	15,203	3.7	56,929	3,208	1,561	34.3	1,030	43.2	6,554	17.0	83.6		
Southern Pacific.....	1954 35,258	35,205	70,463	1.8	59,483	3,085	1,275	28.4	1,019	56.0	9,152	19.5	86.9	
1953 30,855	40,961	71,816	2.1	54,008	2,949	1,239	28.1	1,115	59.4	10,069	18.5	94.3		
Union Pacific.....	1954 34,370	26,375	60,745	2.4	70,899	2,827	1,189	28.5	1,425	76.8	8,935	25.3	99.5	
1953 32,644	31,519	64,163	2.3	66,492	2,763	1,205	29.8	1,470	74.3	9,669	24.4	114.5		
Western Pacific.....	1954 2,549	2,058	4,607	7.0	12,434	2,825	1,022	27.1	1,206	72.0	4,254	21.0	133.	



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You can Unit-Exchange a 5-year-old traction motor (or any other General Motors Diesel locomotive component) and get a fully warranted Electro-Motive factory rebuild that performs better and lasts longer than your old unit did when it was first built.

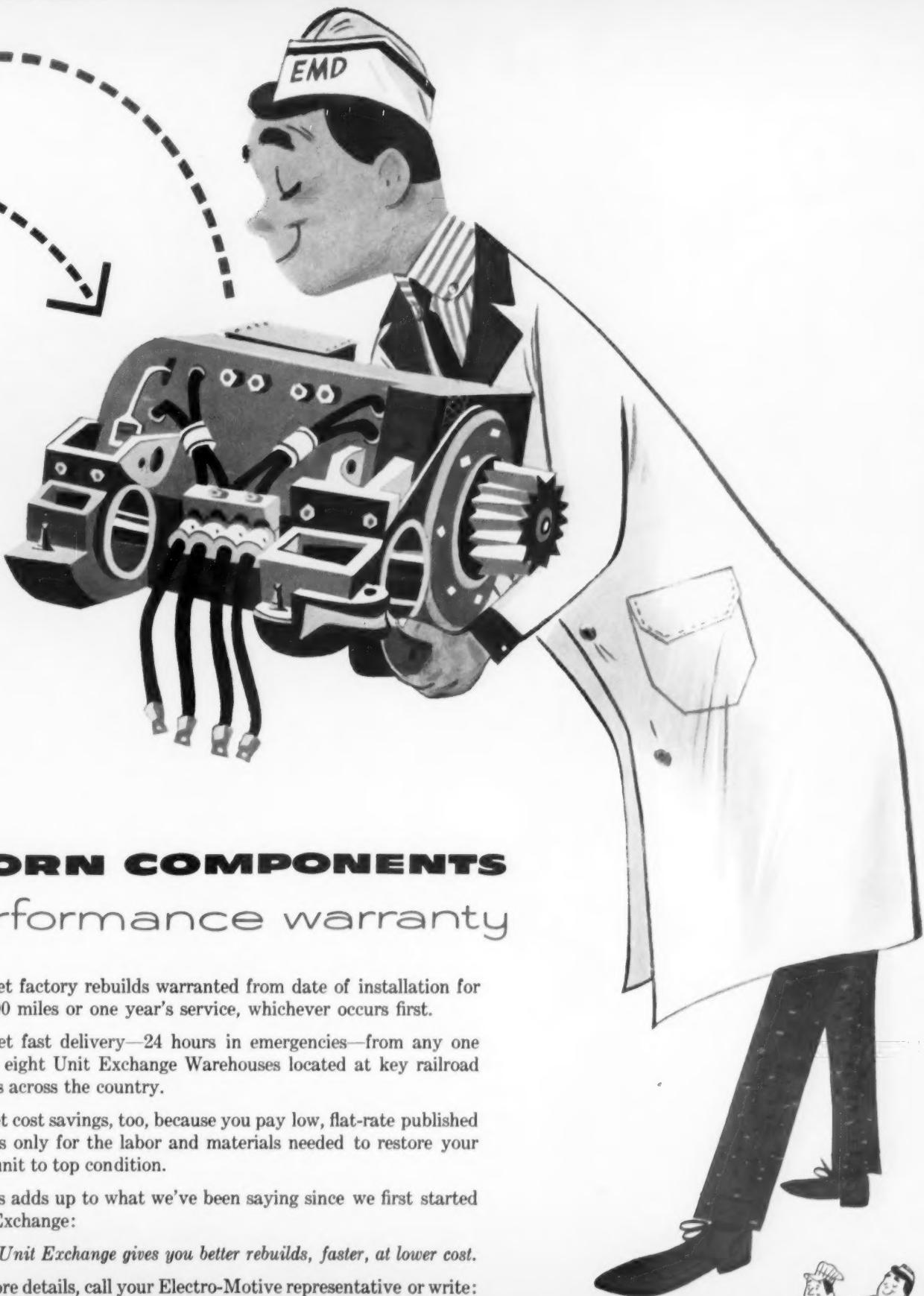
That's because of Electro-Motive's long-established policy that "every component built for a locomotive today must fit a locomotive of the same class built yesterday and make a better locomotive out of it."

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LOW CONDUCTIVITY... Thoroughly washed and sterilized, all-hair heat barrier. Rated conductivity — .25 btu per square foot, per hour, per degree F., per inch thick.

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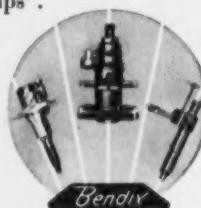
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INSTANTANEOUS POWER for bright, steady signal lights . . . dependable operation of switches, relays, locks, indicators, and allied apparatus . . . PLUS ample reserve for any emergency conditions of operation.

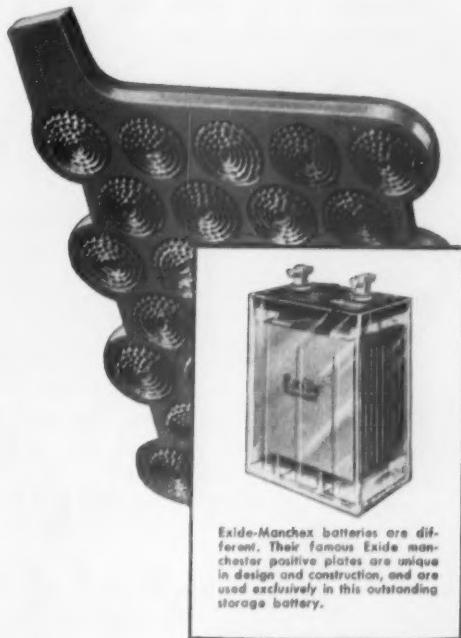
POSITIVE OPERATION. Power is delivered at needed rates, providing steady performance with high sustained voltage.

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FAST ASSEMBLY with Met-L-Wood, whether you fabricate in your shops or use prefabricated Met-L-Wood panels made to your exact specifications.

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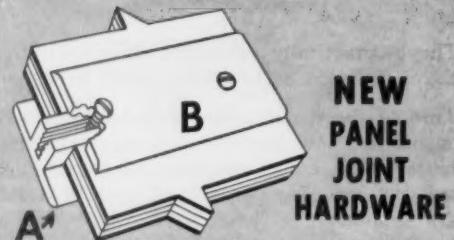
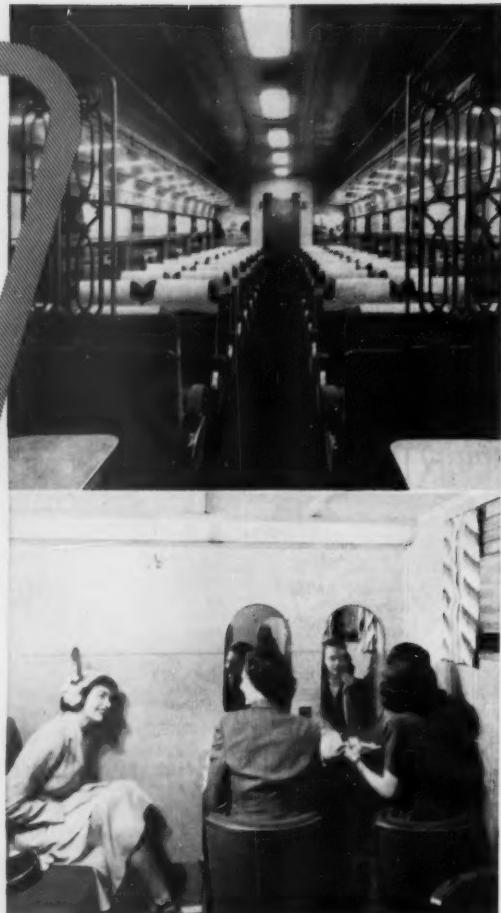
VIBRATION DAMPING effect of Met-L-Wood helps prolong car life — gives passengers extra comfort.

and Smooth, Durable Beauty!

Whether plastic, painted steel, stainless steel, or aluminum, the smooth sweep of Met-L-Wood panels adds beauty to any car interior. Tough, abuse-resisting surfaces keep car interiors new-looking for years.

Details and technical data on Met-L-Wood panels, doors and partitions will be sent promptly on request.

Write for Bulletins 520 and 521

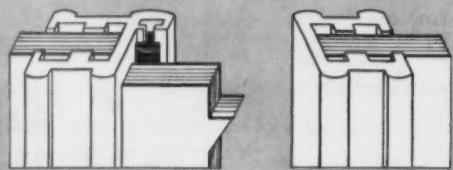


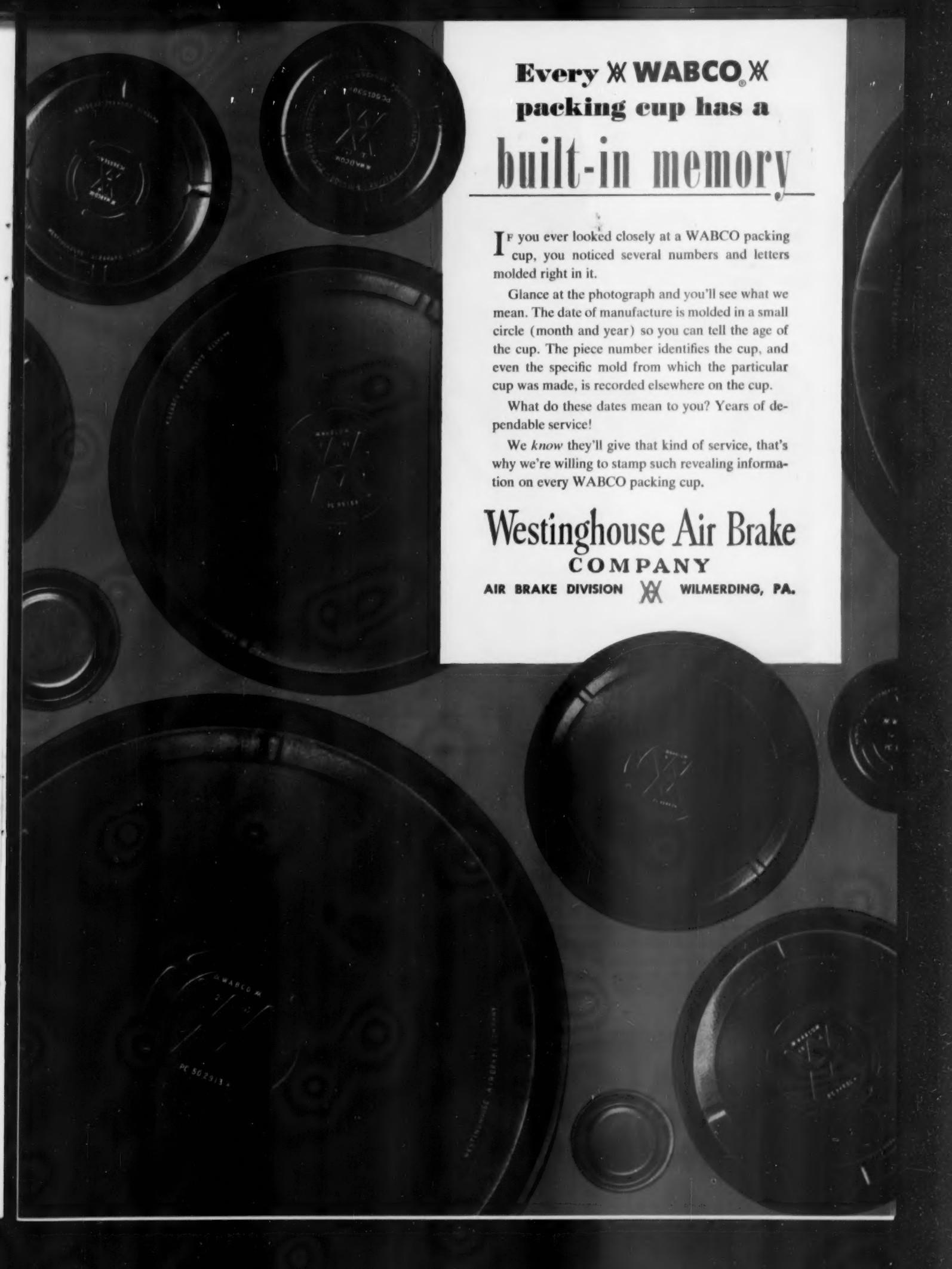
**NEW
PANEL
JOINT
HARDWARE**

Met-L-Wood panels can now be joined faster and more easily with this new extruded aluminum hardware. Strip A has a grooved slot which provides strong threads for standard 10-24 machine screws anywhere along its length. Strip B can be drilled for screws at convenient points along the panel joint.

PANEL EDGE FITTINGS

Extruded aluminum fittings for Met-L-Wood panel edges improve partition and door appearance and give permanent edge protection. Left below is the fitting for door stops. Keyed slot holds molded rubber bumper firmly and permanently. At right is edge fitting for sliding doors and partition edges. Both fittings are easy to install on Met-L-Wood panels.





Every  WABCO 
packing cup has a

built-in memory

IF you ever looked closely at a WABCO packing cup, you noticed several numbers and letters molded right in it.

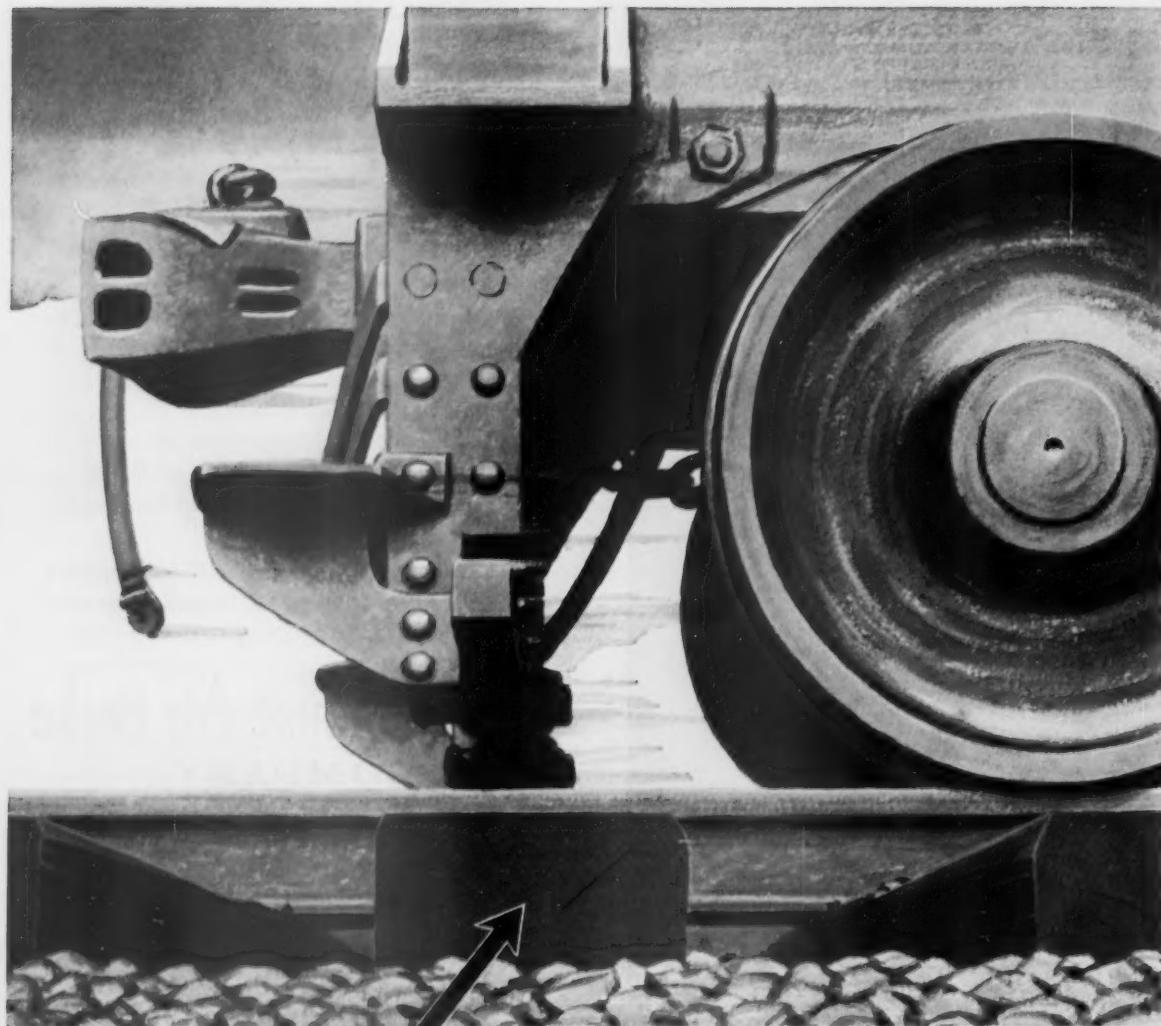
Glance at the photograph and you'll see what we mean. The date of manufacture is molded in a small circle (month and year) so you can tell the age of the cup. The piece number identifies the cup, and even the specific mold from which the particular cup was made, is recorded elsewhere on the cup.

What do these dates mean to you? Years of dependable service!

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COMPANY**

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Penetrated . . . preserved . . . protected to the heart of the wood

Life insurance for your ties

Outstanding performance is guaranteed by ties that have been treated with Barrett Coal-Tar Creosote, the wood preservative that has stood the test of 100 years of use. Barrett Creosote gives the ties in your roadbed a life expectancy of over 30 years under the roughest treatment and climatic conditions. Don't take a chance on premature deterioration of such a basic part of your business as the ties your trains travel over. Specify Barrett Coal-Tar Creosote, the outstanding leader in wood preservatives.

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- retards checking and brooming

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CHEMICAL PROGRESS WEEK
MAY 17-22



BARRETT CREOSOTE

TYPE F COUPLER & YOKE

COUPLER F-70

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DESIGN FEATURES

- ① New Safety Shelf—to support mated coupler in event of pullout.
- ② Interlocking—Guard arm and aligning wings similar to type H Coupler.
- ③ Reduced free slack.
- ④ Improved positive anti-creep.
- ⑤ Easier operation.
- ⑥ Increased strength.
- ⑦ Reduced wear.
- ⑧ Coupler, Yoke, Follower, and Striker interchangeable as a group with present standards.

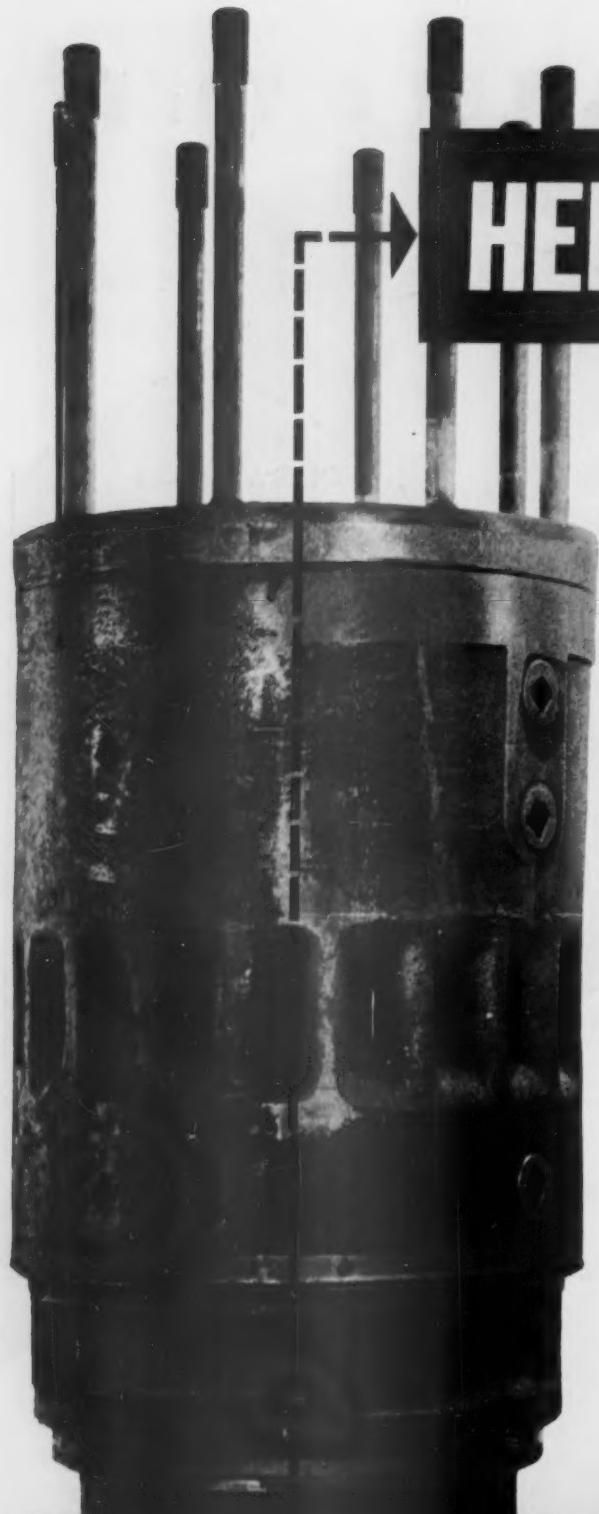
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of service miles

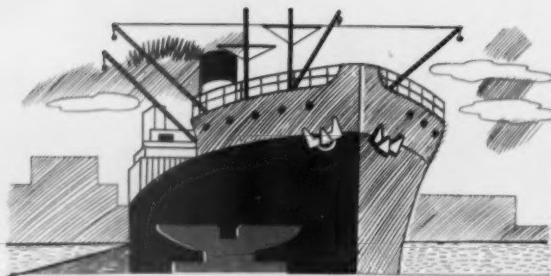
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profit while the
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Current Publications

BOOKS

SIXTY-FIFTH ANNUAL REPORT ON STATISTICS OF RAILWAYS IN THE UNITED STATES FOR THE YEAR ENDED DECEMBER 31, 1951. 616 pages. Prepared by Bureau of Transport Economics and Statistics, Interstate Commerce Commission. Available from Government Printing Office, Washington 25, D.C. \$3.75.

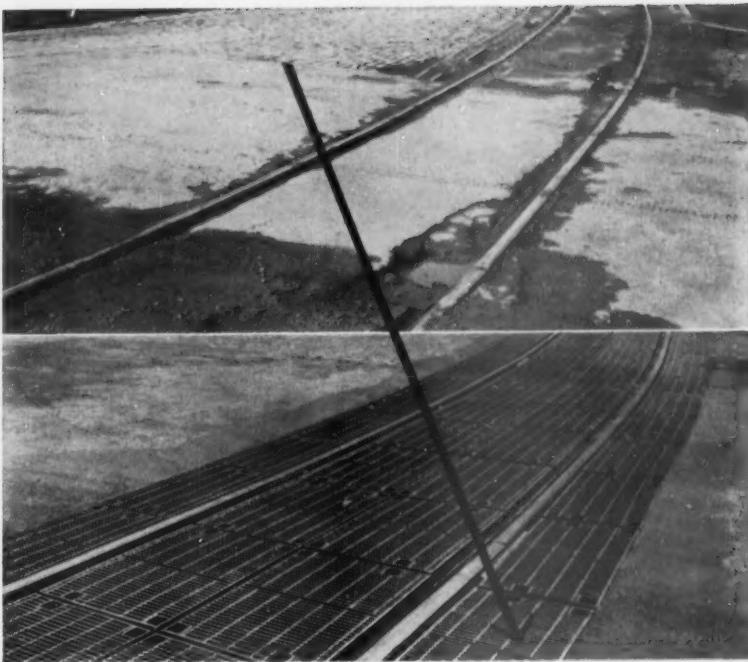
This volume of statistics, commonly known as the "Blue Book," is undoubtedly the most comprehensive one available on steam railways. It includes data on roadway and track, equipment, traffic, operation, employees, fuel, accidents, revenues, expenses and taxes, income and earned surplus, dividends and interest, balance sheet, investment in road and equipment, capitalization, and receiverships and trustee-ships. In addition it contains abstracts of reports of individual steam railways, and selected data for the Pullman Company, the Railway Express Agency, electric railways, carriers by water, oil pipe lines, motor carriers, freight forwarders, and private car owners, subject to the Interstate Commerce Act.

THE ECONOMIC ALMANAC, 1953-1954, edited by Frederick W. Jones. Twelfth edition. 740 pages. Published for the National Industrial Conference Board by Thomas Y. Crowell Company, 432 Fourth ave., New York 16. \$3.95.

A handbook of useful facts and statistical data about business, labor and government in the United States and other areas. It is divided into 24 sections, covering population, resources, agriculture, prices, banking and finance, public and private debt, communications, transportation, trade, electricity and gas, construction, service, mining, manufacturing, American enterprise—general, statistics of individual industries, labor force, consumption and standard of living, individual savings and national wealth, national income, public finance, U.S. foreign trade, international financial position of the U.S., and international economic statistics. This edition is the first to be generally distributed by a trade publisher.

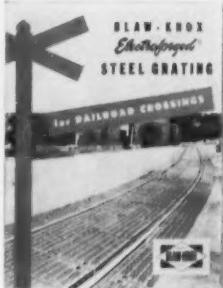
NEW CONCEPTS IN STRUCTURAL JOINT DESIGN. Second Progress Report of Research Council on Riveted and Bolted Structural Joints of the Engineering Foundation. 44 pages, illustrations. E. J. Ruble, chairman, 3140 S. Federal st., Chicago 16. Free.

A comprehensive report of studies conducted by various project committees of the research council with regard to static and fatigue strength of riveted and bolted joints. The report outlines accomplishments of the council (Continued on page 33)



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• builds public goodwill • cuts track maintenance



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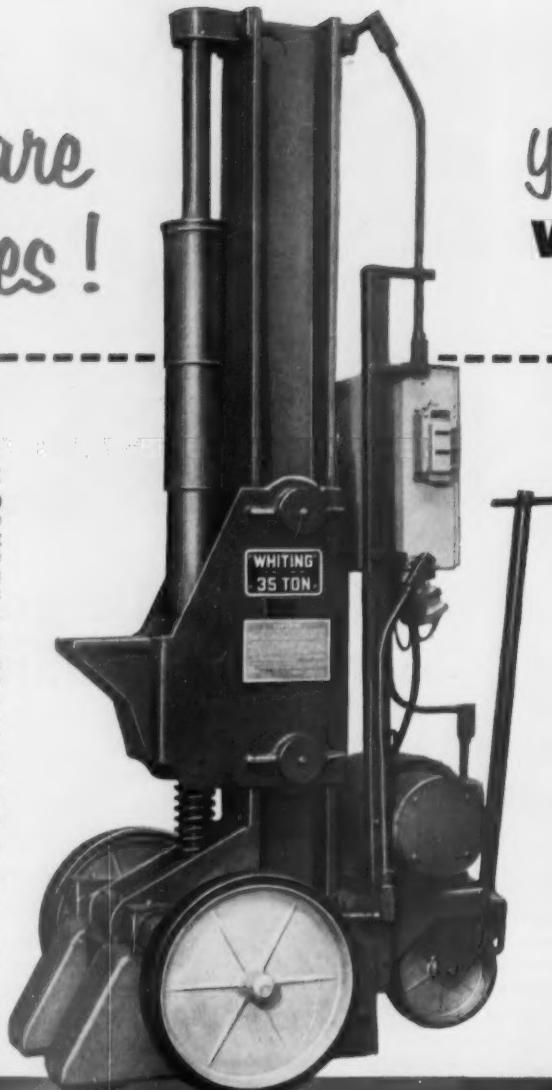
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Get "fingertip" action with Whiting Jacks. Control box and push-button station mounted on jack makes operation simple. Either two or four jacks may be operated in unison from one station by means of special interlocking controls.

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Electric power costs much less and is always available. Extra-rugged construction plus simple design assure long, trouble-free operation and low maintenance.

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Whiting Jack has large size steel base for positive footing. Load carried on powerful 4 inch diameter steel screws (covered). Low unit bearing pressure assures long life of working parts. Self-locking worm gears automatically hold load in case of power failure. Motor equipped with automatic electric brake. Top and bottom limit switches prevent overrun of lifting brackets. Any one or all jacks can be operated remotely with utmost safety.



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WHITING CORPORATION
15603 Lathrop Avenue, Harvey, Ill.

Free Bulletin

Bulletin PJC-402 gives complete information on Whiting Portable Jacks. Write for your free copy today!

Current Publications

(Continued from page 31)

and the status of the project committees' work to date. Results of tests, condensations of current and past published data, new investigations underway, bibliography and, in some cases, conclusions which will lead to a change in current design and construction practice, are presented for the following studies: Effect of bearing pressure on strength of riveted joints; effect of rivet pattern on static strength of structural joints; strength of rivets in combined shear and tension; fatigue strength of bolted structural joints; effect of grip on fatigue strength of riveted and bolted joints; fatigue strength of high-strength steel riveted joints; effect of rivet pattern upon fatigue strength of structural joints; and fatigue tests on cumulative damage in structural joints.

EMMETT'S DOMAIN: TRAINS, TRAMS AND ENGLISHMEN: THE BEST OF ROWLAND EMMETT. Illustrations, 159 pages. Harcourt, Brace & Co., 383 Madison Ave., New York 17. \$3.50.

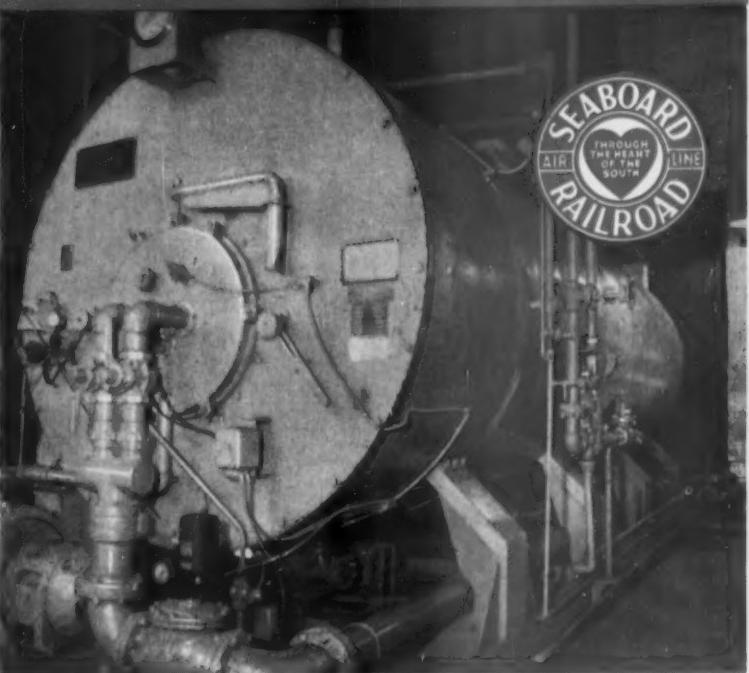
The fascinating, cobweb-like drawings that make up the zany domain of Rowland Emett have been a feature of Punch, Britain's outstanding comic weekly, for more than a decade. Mr. Emett has here selected the best of his cartoons for the American public and has written a brief text to accompany them. The book is divided into five sections—the Englishman's castle; the iron road; wheels and wings; art: its hazards and joys; and unclassified aspects, all hilarious for their bizarre and yet subtle criticism of mechanized society. "Emett's Domain" is a world that tries to make the best of its streamlined contrivances while it patiently struggles to retain its ties with long-loved Edwardian ways.

PAMPHLETS

ACCIDENT BULLETIN, NO. 121: SUMMARY AND ANALYSIS OF ACCIDENTS ON STEAM RAILWAYS IN THE UNITED STATES SUBJECT TO THE INTERSTATE COMMERCE ACT, CALENDAR YEAR 1952. 95 pages. Prepared by Bureau of Transport Economics and Statistics, Interstate Commerce Commission. For sale by Government Printing Office, Washington 25, D.C. 55 cents.

Contains statistics on train and train-service accidents, highway grade-crossing accidents, and casualties to passengers, employees and trespassers. Part I summarizes various kinds of accidents for recent years; Part II gives detailed statistics for all railroads for 1952; and Part III, detailed statistics for individual railroads for the same year.

AMESTEAM ... On The Seaboard



You're Looking at ECONOMY in Boiler Operation . . .

at a 600 hp. Clip!

Above is shown one of two 600 hp. AMESTEAM Generators at the Hermitage Diesel Shops of the Seaboard Air Line Railroad at Richmond, Va. These compact, highly efficient boilers are providing substantial savings. Completely automatic—they insure a steady flow of heat and process steam at this important Seaboard facility. Other AMESTEAM Generators are located at five other points on the Seaboard system.

Many of the nation's foremost roads are AMESTEAM users. These modern package boilers banish boiler room labor and are guaranteed producers of better than 80% thermal efficiency. "The Railroad Boiler" is available in single units from 10 to 600 hp. Design pressure—15 to 200 lbs. Higher pressures on special order. Phone, write or wire.

"The Railroad Boiler"





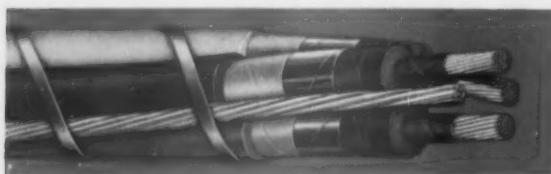
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can't handle OZONE**

You need U. S. GRIZZLY Uskorona-insulated Power Cables

Here's an illustration showing how ozone can chew up a sturdy, rugged cable. This can never happen with United States Rubber Company's famous Grizzly® Power Cables insulated with Uskorona® compound which prevents electrical failure caused by ozone (Uskorona-1 oil base compound or Uskorona-2 butyl rubber compound). Uskorona meets (and in many ways exceeds) the applicable IPCEA specifications for ozone-resistant rubber insulation.

As the only wire manufacturer that grows its own natural

rubber, produces its own synthetics and makes its own plastics (as well as the bulk of its own rubber-compounding chemicals and ingredients), United States Rubber Company is able to make certain that only the finest materials are used in the insulations for its wires and cables. These materials are expertly compounded according to methods devised after years of research and experimentation in "U.S." laboratories. Finally, U.S. Rubber's practical "know-how" contributes its important part to the uniform high quality of every "U.S." insulation. This "know-how" is the result of 68 years of successful manufacture of electrical wires and cables, and over a century in the making of fine rubber products.



U. S. Grizzly Uskorona-insulated Power Cable, 5,000 Volts, type RR 3 conductor, shielded, Neoprene jacket.

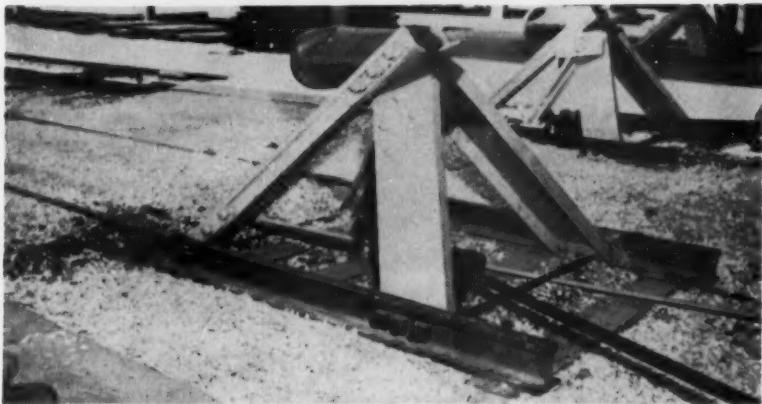


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UNITED STATES RUBBER COMPANY
ELECTRICAL WIRE & CABLE DEPARTMENT ROCKEFELLER CENTER, NEW YORK 20, N. Y.

What's New in Products



DURABLE MODEL D bumping post for both passenger and freight installations.

Adaptable Bumping Posts

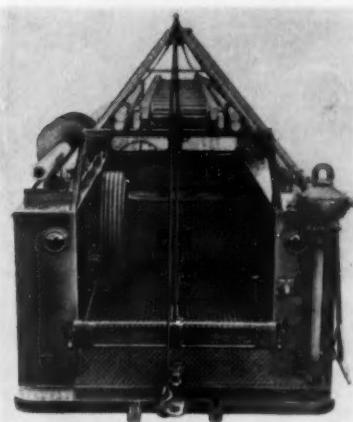
The Durable bumping posts manufactured by the Wasco Supply Company, Chicago, successor to the Albert L. Letterman Company, can be erected on any size track rails above 4½ in. in height. On installations where track rails are smaller than 4½ in. special adapter castings are available.

Two models are offered, both of all steel construction. Model B, designed for freight-car installations, weighs approximately 1,285 lb; and Model D, a dual-purpose freight and passenger car post, weighs approximately 1,325 lb. Tension members are set at 45 deg and compression members at 60

deg to the running rail, thereby distributing approximately 75 per cent of the impact force to the ties and ballast.

Both Durable posts have a new concave striking surface which, it is stated, provides a direct point of contact for the coupler whether it is in its central position or swung to one side.

The installations can be made on existing tracks without removing the rails and are said to require no more than 6 ft of track loss. A template is furnished with the erecting instructions so that men in the field can accurately locate and square up all holes to be drilled in the running rails.



Combination Truck Bodies

Tel-E-Lect, Inc., Minneapolis, is now offering bodies for ¾- and 1-ton trucks for combination service. These bodies, complete with Stowaway derrick and

digging unit, are designed particularly for poleline work and require only two men to operate.

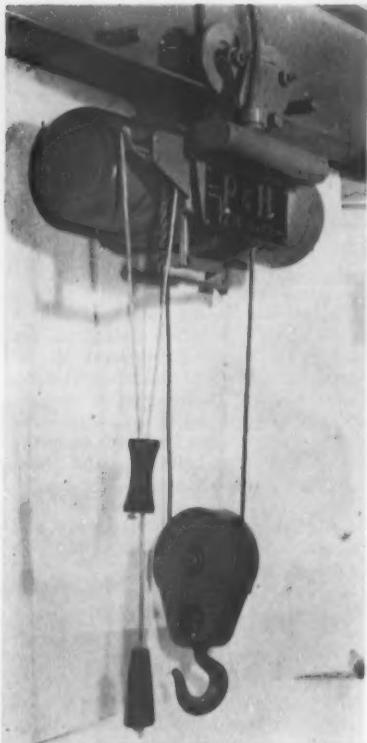
The Model D combination body is of 16-gage steel, electrically welded, and is equipped with 18-gage weather-tight doors and keyed locks. Special compartment bins and shelves may be provided as optional items. Four-way tread plates are used on the floors and rear step and provide added safety.

The Stowaway derrick is equipped with a safety leg. It is said that it can be raised to working position in less than one minute by simply engaging the power take-off. The digging unit is stored on carrier brackets and it is said that it can be set up ready for work in as little as two to three minutes.

These units are equipped with a Model 400-V winch drive transmission provided with forward, neutral and reverse control to the winch, which is said to eliminate the need for shifting the power take-off or using the truck

clutch to obtain forward or reverse winch rotation.

The entire unit is delivered set up so the only local work required is mounting the body, power take-off and cab controls on the chassis of any make of truck.



Wire Rope Hoist

A specially developed one-hand rope control is one of the features of the new P & H Zip-Lift hoist recently announced by the Harnischfeger Corporation, Milwaukee. This hoist has a net weight of 100 lb and is supplied with two 3/16-in. hoisting cables and ½-hp motor.

The unit is designed for operation on 110-, 220- or 440-volt 60-cycle current. Single-phase current is required for 110-volt operation and three-phase current for 220 and 440-volt operation. The hoists are available in capacities of 500 lb at 25 ft per min and 1,000 lb at 13 ft per min hoisting speed. They are furnished with 15 ft of rubber covered flexible conductor cable.

Rigid shoe and spring wheel collectors are available as extras for either 2-wire or 3-wire systems. Also available as extras are hook or trolley mountings and full magnetic push-button controls.

(More New Products on next page)

More New Products

New Rust Preventative

"Blakled" (pronounced "black lead") is a new rust preventative announced by the U.S. Steel Supply Division of United States Steel Corporation, Chicago 90.

The division says that the lead coating is "neither a conventional paint nor a pigment ground into a vehicle." Instead, it "fills in" the surface of steel and actually replaces moisture and air on a steel surface. This is reported to eliminate the principal cause of rust. The product may be applied to wet, brushed, rusted surfaces, dry or light mill-scaled steel. It is said to dry in an hour; it may be dipped, sprayed or brushed onto the steel. •

Industrial Disinfectant

Iodine has been combined with a compatible synthetic detergent in Showersan, a new disinfectant for industrial and institutional use developed by the West Disinfecting Company, 42-16 West St., Long Island City, N. Y. Special formulation is said to make the iodine non-irritating and non-staining. The company claims laboratory tests have demonstrated that, when properly diluted, Showersan will kill within 15 seconds the spores which cause athlete's foot. •

Easily Pulled Cable

Installation of non-metallic sheathed cable has been made easier by a smoother, cleaner surface on Silver Dutrax, a product of Anaconda Wire & Cable Co., 25 Broadway, New York 4. It is said that this cable can be pulled through joists with half the effort necessary for ordinary non-metallic sheathed cable. The manufacturer states that storage in cartons for three days at 170 deg F demonstrated no appreciable stickiness, not even when the coils were cooled down to 70 deg F, to determine whether layers would stick to each other. The cable, throughout, was tack-free; the layers were free from each other; and the coil was easy to feed out, it is reported, and field installations in temperatures up to 90-deg F, confirmed results achieved in the laboratories.

Low-temperature characteristics of the cable also were investigated. It was first stored for three days at temperatures ranging from zero F to minus 25 deg F. Cable was then pulled through wooden joists at zero. No difficulty was encountered. It is said that the finish did not flake off or peel in use, and it did not mar wall surfaces. •



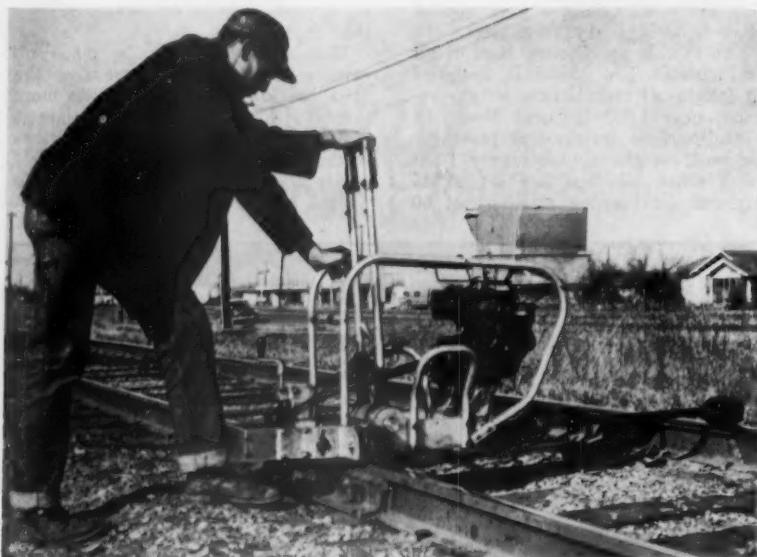
Power Track Drill

An improved Buda Model "P" power track drill has been announced by the Buda Company, Harvey, Ill. This drill is powered by a Briggs & Stratton Model 6R6, 1 1/4-hp 4-cycle air-cooled gasoline engine equipped with a 1/2-gal gasoline tank and rope starter. A welded gear housing protects the internal gears.

The unit is equipped with an adjustable base and "locater rods" which permit adjustment of the drill from

either a ground position or from the top of rail. A long over-clutch hook has been provided with a spread of 15 in. between the hook and the drill to permit drilling at filler blocks of switches and guard rails in track. A redesigned sleeve on the drill spindle allows a single spindle assembly to handle all flat drills from 7/16 in. to 1 9/16 in.

The drill is designed for one-man operation and weighs approximately 140 lb when not equipped with locater rods. •



Rail Bonding Drill

The weight of the new Raco-Everett Universal rail bonding drill is said to have been reduced to less than 200 lb by the use of aluminum alloy. This unit, Model 50, is a product of the Railroad Accessories Corporation, New York. It is said that the reduced weight of this model permits easy removal from the track and causes the machine to track excellently when in operation.

The unit has been designed to drill

any type of rail in any worn condition, it is reported. This is accomplished by easy adjustment of the drill bit to any position from 16 deg above to 16 deg below the horizontal. Adjustable elevating stops have been provided to permit movement of the bit from head to web of the rail, or the reverse, to an exact, predetermined position. •

The illustration of the Raco-Everett rail bonding drill and the description of the Buda power track drill were inadvertently paired in the April 5 issue of Railway Age.



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on hot oil, too?*

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equally good for oil, steam
and gas!**

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J-M Kearsarge Handhole and Man-hole Gaskets, Style No. 116—Durable and resilient. Made of folded and cemented plies of asbestos-metallic cloth.

J-M Spirotallic Boiler Gaskets, Style No. 914—Strong and resilient, spirally wound metal-asbestos gaskets.

J-M Liberty Red Rubber, Style No. 107—For water, air and steam at low temperatures and pressures.

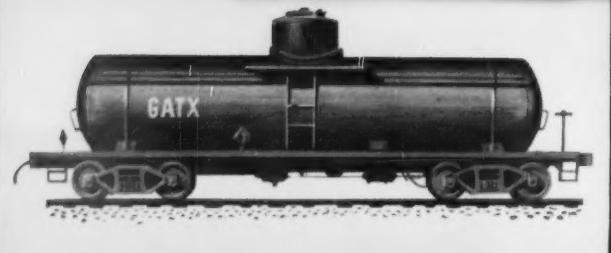
Your Johns-Manville Transportation Representative will help, too! He will be glad to talk with you about your packing problems and suggest ways to get the most out of your packings . . . or to help you select the most efficient and long-wearing packing for your job. Johns-Manville, Box 60, New York 16, N. Y.



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Pricing—for the Market of 1954, or 1904?

For the future of the railroads—a great deal depends on how rapidly and thoroughly they can adapt their rates and services to entirely new surroundings; and can secure public and regulatory acceptance of the necessary adaptation. Passenger transportation has, long since, been performed predominantly by private vehicles, rather than by public carriers. In freight transportation, rivalry of other agencies has been around for a long time—but only in the past couple of years has the total freight transportation job performed by all these other agencies, combined, approached rail volume.

The railroads cannot permit this loss of freight traffic to continue further, if there is any practicable way of arresting it. Because, the fact is, railroad transportation is not economical transportation unless traffic volume is kept relatively heavy. When volume is heavy, no other method of transportation—except, possibly, that on natural waterways which do not have to be dredged, or by pipelines—can approach the economy of the railroads. But unless there is enough tonnage to provide well-filled cars; and enough cars to fill trains out to efficient size; and enough trains to make reasonable use of available track facilities—then the potential superlative economy of railroad transportation service is not achieved.

Freight rates of a kind which tempt shippers to take volume tonnage off the rails—when, with adequate volume, rail transportation would prove more economical than any other available means—are not merely a disservice to the railroads. Such rates also greatly increase the total cost of transportation to the nation—and thereby reduce everybody's wealth and income. The same goes for mail traffic. On routes where such traffic is available in quantity, the railroads can haul it more economically than any other agency of transportation—and the fact that the Post Office is able to divert such traffic to the air with even the semblance of savings to itself, affords conclusive evidence of a faulty and outmoded system of pricing.

The justification for regulation of industry is the protection of the public interest—where that interest cannot be adequately protected by the operation of competitive forces and ordinary civil and criminal law. As long as the railroads had a

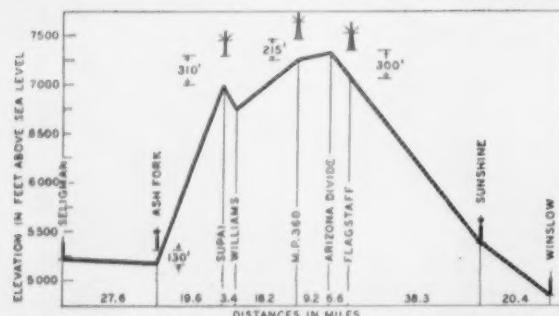
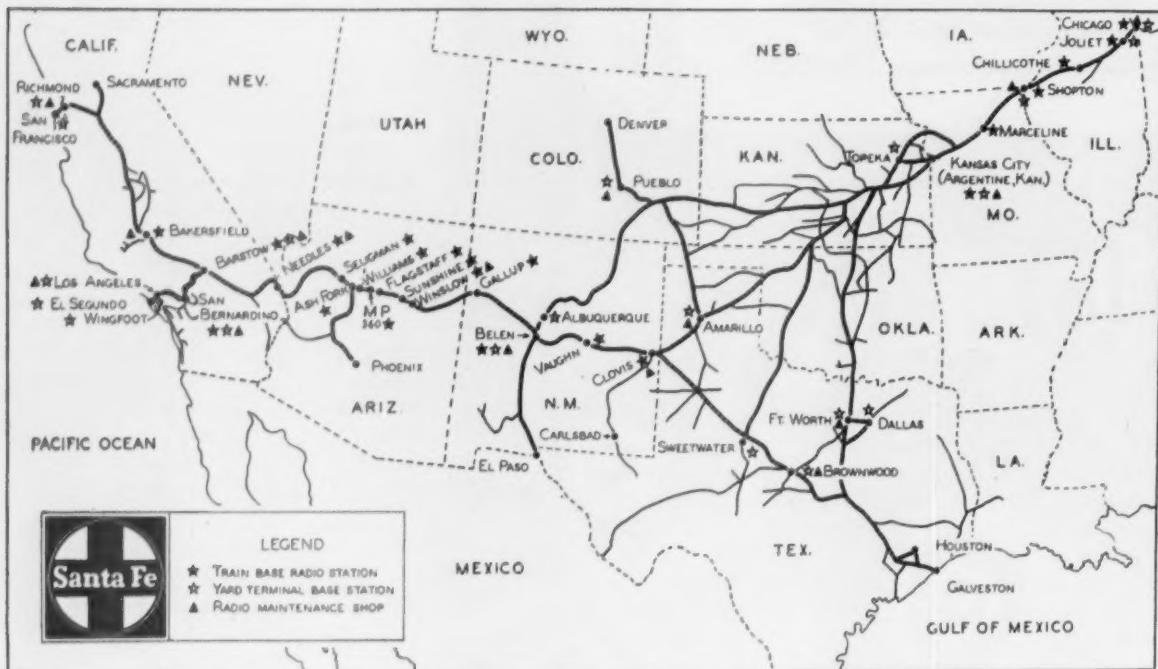
near-monopoly in transportation, there was always the danger that isolated shippers would be discriminated against, arbitrarily. In the absence of regulatory authority, the victim of such arbitrary discrimination would have no recourse. Nowadays, there can be no possibility of arbitrary discrimination, even in the complete lack of any regulation—because the intended victim of discrimination now has available several or many alternative methods of getting his transportation work done.

Today, the acute threat to the public interest in the transportation industry no longer lies in potential discrimination by a monopoly. It lies instead in the (nowadays) far more prevalent danger that horse-and-buggy pricing principles and practices may drive traffic to more expensive methods of movement, and divert it from the more economical. A pricing system tailored to conditions of monopoly, and largely frozen by regulation in that form, is retained in a period of competition—when the public interest requires an entirely different method of pricing.

Legislators never legislate for the present or the future, but always for the past. The Washington authorities got tough with spies and Communists, not before the secret of the A-bomb had been purloined, but afterward. Legislation protects against present dangers only when past dangers continue into the present. When conditions change as they have changed in transportation, protective legislation is inevitably outmoded.

In legislating for the regulation of transportation, however, Congress has usually taken due notice of its difficulty in keeping up-to-date with events. That is to say, the statutes—while specific enough in their intent to put an end to the kind of misbehavior that has prevailed in the past—usually allow a considerable measure of discretion to the regulatory authorities. If Congress had not intended that the application of specific statutes should be mitigated with changed circumstances, no such power of discretion would have been written into the law.

In an era of competition, innovation in pricing is the responsibility of management—not of the regulators. The regulators can be justly blamed for lack of modernity in pricing practices only to the degree that they impose obstacles in the way of healthy adjustment to changed conditions, to a greater extent than the law specifically requires of them; or if they fail to urge changes in the law where the law as it stands does not permit them to protect the public interest in keeping transportation economical.



RADIO STATIONS located on hill tops provide line-of-sight coverage over Arizona divide.



ENGINEER USES RADIO on road freight train to talk to his conductor or to wayside offices.

Santa Fe Radio

Rapidly progressing installation includes radio in principal yards and on through freight trains in two-thirds of Chicago-Los Angeles main lines as well as in wayside offices

The Santa Fe is in the midst of installing radio communications on a systemwide basis on through freight trains, in wayside offices, and in yards. Already 121 locomotives, 265 cabooses and 19 wayside stations have been equipped for end-to-end and train-to-wayside radio communication. Eighteen yards have base stations, providing radio communications between yardmasters and 176 switch engines. Walkie-talkies are used in car checking in five of these yards, and they are also used at one of these yards for car inspection.

To maintain this radio equipment, 16 maintenance shops are located at division points, locomotive pool headquarters and locomotive inspection points.

After several successful tests of radio communications on road trains and in yards, the Santa Fe installed radio on freight trains operating through 1,200 miles of mountainous territory in New Mexico, Arizona and California. In general this territory extends from Clovis, N.M., and Belen, on the east, to San Bernardino, Cal., and Bakersfield, on the west. The railroad crosses four major mountain ranges: the Continental divide (7,247



RADIO ENABLES CONDUCTOR to confer with engineer as well as to give him a verbal "highball" and train inspection information.



CAR CHECKER USES RADIO to call in numbers and initials to yard office.

Is Systemwide

ft elevation) near Gallup, N.M., the Arizona divide (elevation 7,313 ft) near Flagstaff, Ariz., Tehachapi mountain (3,963 ft elevation) near Mojave, Cal., and Cajon Pass (3,822 ft) near Summit, Cal.

The section from Belen to Barstow is the main trunk line which carries all the road's traffic east and west, to and from California, which approximates 50 trains daily. In the 143-mile section between Seligman, Ariz., and Winslow there are seven wayside stations which are radio equipped. In case of line wire breaks, these stations can provide point-to-point communications.

Why Radio on Main Through Routes?

These extensive radio installations on 1,200 miles of road, west of Clovis and Belen, proved to be highly successful in saving train time, especially in reducing the duration of delays in case of hot boxes, or other mechanical trouble. On the basis of these good results, the Santa Fe management decided to install radio on the remainder of the principal routes throughout the system on freight trains, in major wayside offices, and in principal yards.

In carrying out this policy, the next project was to install radio on the main Chicago to Kansas City line, 451 miles, on which traffic approximates 38 trains daily. This project is now well along, and due for completion this year. On the remaining main line section between Kansas City and Clovis, the radio is to be extended in accordance with developments in assignments of locomotives and changes from steam to diesel power in this territory.

The radio on the locomotives is the Bendix model MRT-1 and MRT-8, which operates on 160.65 mc, the same as the wayside radio. The radio equipment is in the rear of the lead "A" unit on the locomotives, and the "wagon wheel" antenna is mounted on the roof over the equipment. Control cables run from the radio equipment to the remote control unit, handset and loudspeaker in the cab, and train-line cables run through the "B" units to the rear "C" unit, where there is another control unit, handset and loudspeaker. The control unit and handset are mounted on the throttle control stand at the engineer's left, with a loudspeaker on the rear wall of the cab. The radio operates on 115 volts a-c, supplied by a Cornell-Dubilier vibrator-converter, operating from the diesel locomotive's 64-volt engine starting battery.

Radio equipment on switch engines is normally placed in a weather-proof housing on top of the locomotive directly in front of the cab. The antenna is mounted on a sunshade, on top of the equipment or, in some cases, directly on the cab roof.

Caboose Equipment

Radio on the cabooses is MRT-1 or MRT-8 which operates off 12 volts d-c or 115 volts a-c. The power is supplied by storage batteries or by means of a vibrator-converter.

Cabooses have generators or alternators which are driven by an axle-belt drive which supply power to the storage batteries. The remote control unit, handset and loudspeaker are mounted on the rear wall of the cupola, the handset being within reach of a person in the cupola or standing in the aisle below.

Thirty-eight base stations are used in yards, for yard radio operations. Some of these stations are used in



RADIO has been installed on switch engines to provide communication between switching crews and yardmasters.

conjunction with car checking, car inspecting and hump yard operations. In most instances, the radio equipment is mounted in the yardmaster's or hump masters' office, with several remote control units and handsets. The antenna is usually mounted on a wood pole or floodlight tower.

These radios operate off commercial power at 115 volts a-c, and in some instances standby power sources are available.

Of the 19 wayside offices equipped with radio for communication with freight trains, most of them use a wood pole, adjacent to the office, for the antenna, with the radio equipment inside the office, and with remote control units and handsets in the yardmasters' offices or on the operator's desk in the depot. These sets usually operate off commercial power.

The radio equipment at all radio stations is Bendix model MRT-8, consisting of three plug-in units: transmitter, receiver and power supply. The remote control units and handsets are in the operators' offices at the depots.

Inductive Carrier for Remote Control

Radio stations for Williams, MP 360, Flagstaff and Sunshine are on tops of hills away from the depots. The radios are remotely controlled, the control and power wires being run from the right-of-way on a separate pole line up to the radio station on the hill. For normal operation, d-c voltage is put on the control wires, either by the operator stepping on his foot switch when making an outgoing call, or by the keying of the receiver when picking up an incoming call. This d-c voltage holds the inductive carrier off the line.

When the control wires are down, or broken, the inductive carrier is automatically put on the line, thereby

establishing control of the standby radio set for the operator. This carrier operates at 200 kc for the Williams station, and there is a full complement of carrier sending and receiving equipment at the depot and at the station on the hill near Supai (Williams). If the power fails, the radio operates off battery.

The station at MP 360, which is controlled by the Williams operator, contains one set of radio equipment with standby battery power. However, MP 360 is controlled by inductive carrier, operating at 140 kc, over a wire-pair on the regular pole line, and then up a physical pair from the right-of-way to the station on the hill.

The radio station at Flagstaff is approximately 300 ft above the railroad. The radio equipment is in duplicate, and is housed in a concrete block building. The inductive carrier control operates at a controlled frequency of 170 kc.

The Winslow operator also controls the radio station at Sunshine, 20.4 miles west of Winslow. The Sunshine station is controlled by inductive carrier operating at 110 kc. The inductive carrier equipment was furnished by the Harmon Electronics Company. If the regular railroad pole line is down, and if the radio stations at Ash Fork, MP 360, and Sunshine fail, communications can be easily maintained between the stations at Seligman and Winslow.

Although it is unlikely that the line wires would be down and the radio stations fail, calls can be made between Seligman and Winslow via Williams and Flagstaff. Thus the Santa Fe's spotting of radio stations on hilltops providing "line-of-sight" coverage would seem to provide for almost any emergency.

Walkie-Talkies Aid Yard Operations

The Santa Fe has 54 walkie-talkies for use in car checking and car inspecting operations in several yards. Car checking using radio communication is done at Argentine, Kan., Pueblo, Colo., Amarillo, Tex., Barstow, Cal., and Belen, N.M. Radio also is used for car inspection work at Amarillo. These packsets usually work in conjunction with a base station which is remotely controlled from the yard office or from the car foreman's office.

Car inspectors use them to talk to each other, as well as to the car foreman. Radio communication for car checking and inspection has proved to be a tremendous time saver in these operations.

Radio Maintenance Shops

Sixteen radio maintenance shops are "spotted" around the system for the maintenance of equipment. Shops are open 8 hours daily except at Los Angeles, Belen, Argentine, and Winslow, which are open 16 hours. The radio maintenance shop which is located at Barstow operates 24 hours a day.

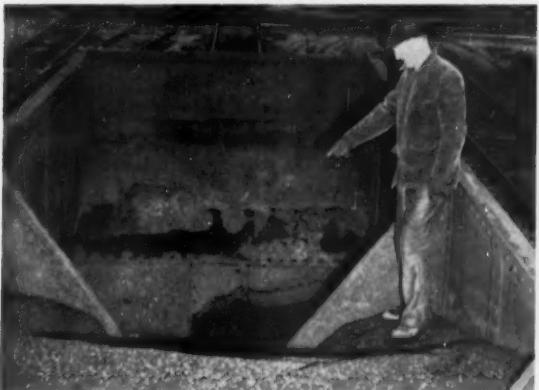
The major items of radio equipment were furnished by the Bendix Radio division of the Bendix Aviation Corporation. Field surveys, planning and installation were done by railroad forces under the jurisdiction of J. A. Parkinson, general superintendent of communications.

LOST: 48,700 LB...



This car contained a net lading of 122,000 lb when it left a mine at Harrisburg, Ill. It was delivered in Michigan City with a net lading of only 73,300 lb.

LOST: 65,020 LB...



Stoker coal loaded in this car at West Clinton, Ind., weighed 105,500 lb including water allowance. Only 40,480 lb reached Michigan City, however.



WHY: A badly bent latch which would not close the hopper door tightly. Note wooden wedge applied somewhere en route by an inspector.



WHY: A battered hopper door with an opening of 1½ in. or more all across top and both sides. The door appears to have been pried open.

Battered Hopper Doors . . .

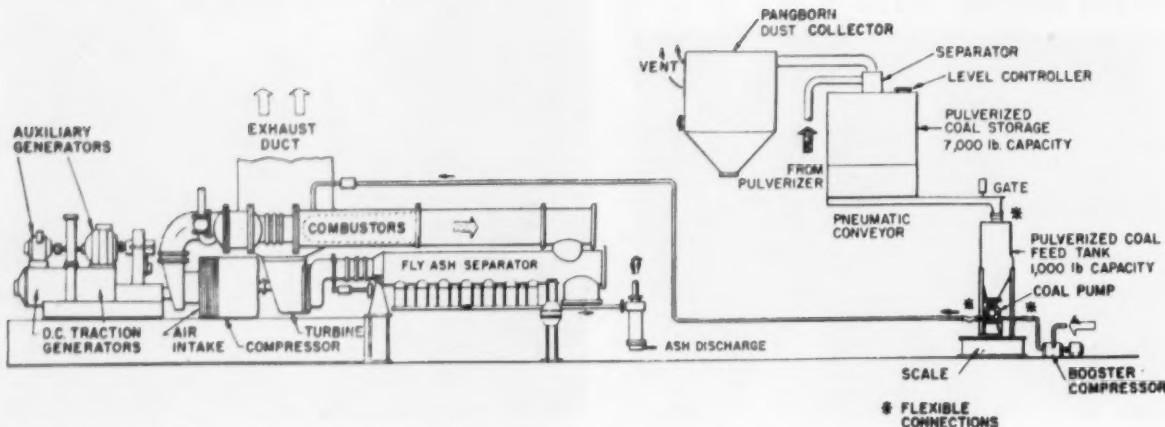
An irritation to shippers, they drain away good will as well as coal

Operating officers of the Chicago South Shore & South Bend recently undertook a study of loss and damage claim causes affecting shippers and receivers on the line. One major source of irritation, they discovered, was the loading of coal into hopper cars that have battered and defective hopper doors. The accompanying illustrations show a typical experience of the Northern Indiana Public Service Company, an important receiver of coal on the South Shore at Michigan City, Ind.

The power company's coal unloading supervisor, John Bont (seen in the pictures) feels that cars like those shown should have been marked for repairs, not loading, when they were inspected. Perhaps, too, he feels, a well-planned program of education among con-

signee unloading employees might get at the root of the trouble by cutting down the abuse to which hopper cars are usually subjected.

While pointing to the lost lading in the car from Harrisburg (upper left), he recalled receipt of a similar bad order car with a broken cross ridge less than a year ago. In this case there was no loss of lading, but the broken segment of the cross ridge was buried in the lading where it remained undiscovered until the coal was placed on the power company's belt conveyor system. The result: The belt and its mechanism were badly damaged and the entire system had to be closed down for repairs which cost the power company many thousands of dollars.



The Locomotive Development Committee gas-turbine test plant at Dunkirk, N.Y., as revised for 1954 operation.

ASH SEPARATION THE KEY TO Coal-Burning Turbine Progress

American Locomotive Company joined Locomotive Development Committee in 1953—New ash separator to be tested in 1954—Improved instrumentation in effect for the current program

A report of the work done during 1953 by the Locomotive Development Committee of Bituminous Coal Research, Inc., and the American Locomotive Company on the development of a pulverized-coal-burning locomotive was made in a statement prepared by John I. Yellott, director of research, and Peter R. Broadley, assistant director of research, of the Locomotive Development Committee and presented by at a techno-sales conference of Bituminous Coal Research, Inc., at Columbus, Ohio, on March 23. This statement is presented here in condensed form.

General responsibility for the Locomotive Development Committee—American Locomotive Company program for 1953-54 was assigned to Chairman R. B. White of L.D.C. and President P. T. Egbert of Alco. They delegated the planning and carrying out of the program to an Operating Committee consisting of K. A. Browne, chairman of the Mechanical Advisory Group, L.D.C.; H. L. Weinberg, director of engineering, Alco; J. I. Yellott and P. R. Broadley, director and assistant director of research, respectively, L.D.C. The program has been administered by the L.D.C. staff at the expense of L.D.C. It was divided into three parts as follows:

* For the announcement of the contract between Bituminous Coal Research and American Locomotive Company, whereby both parties would participate in a continuing program of research, in connection with the development of a pulverized-coal gas-turbine locomotive, see *Railway Age*, March 16, 1953, page 23.

- **Coal Supply**—L.D.C. accepted responsibility for developing methods of supplying gas-turbine locomotives with suitable coal and for making certain revisions in the coal-handling equipment at the Dunkirk test plant.

- **Ash Separator Development**—Alco and L.D.C. jointly assumed responsibility for developing and installing a new fly-ash separator and improved instrumentation in the test plant.

- **Turbine Test**—Also accepted responsibility for providing necessary new blades for the L.D.C. 4,250-hp turbine and for conducting a series of turbine tests using the new separator.

Coal-Supply Study

Operating experience has shown that little if any restriction need be placed on the kind of coal, but the coal must be free-flowing when it reaches the locomotive bunker, without foreign matter which can interrupt the fuel supply. Somewhere between the coal seam and the gas turbine combustor, the coal must be pulverized to a fineness of at least 95% minus 100 mesh.

Through the operation of a Subcommittee on Coal Supply, L.D.C. is reviewing the entire problem of supplying suitable coal for gas-turbine locomotives. Cost estimates are being prepared to permit economic evaluations to be made of the various systems which have been proposed for supplying "gas-turbine coal."

The pulverized coal required during the next turbine test program will be supplied by the equipment used during the 750-hour test[†], rearranged to separate the stoker and pulverizer from direct connection with the turbine feed tank.

Pulverized coal from the B. & W. mill is delivered through a dust collector, with the fines returned to the storage tank by a screw conveyor. A pneumatic conveyor transfers the pulverized coal to the feed tank.

The L.D.C. rotary coal pump feeds the pulverized fuel from the scale-mounted turbine feed tank into the conveying air line which carries it to the twin combustors. Flexible connections enable the feed tank to be weighed and the coal consumption rate to be determined accurately. A variable-speed electric transmission drives the coal pump and serves as the turbine throttle by regulating the speed of the pump rotor.

Ash-Separator Development

During the first 178 hours of operation of the 4,250-hp turbine, no appreciable damage was done to the blading by erosion. During this period, the ash separator functioned continuously at top efficiency and the ash particles entering the turbine were virtually all smaller than 20 microns in diameter. Early in the 750-hour test, a leak occurred within the separator and serious erosion took place. When the leak was repaired and high load operation was resumed, separator performance was found to be quite erratic and consistent operation at high efficiency could not be maintained. The reason for this inconsistency did not become apparent until, at the conclusion of the test, the discharge manifolds were cut apart and obstructions were found.

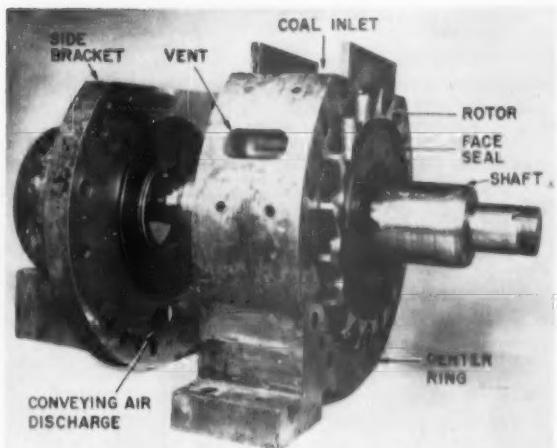
When the L.D.C.-Alco program was being formulated, it was realized that the separator was the key to successful operation of the direct-fired coal-burning gas turbine. The development laboratory was accordingly given the assignment of improving the Dunlab separator tube and designing an ash blowdown system which could not be obstructed. A new multtube separator was designed in which the individual tubes acted as their own pressure vessels, thus eliminating the large pressure shell which was formerly used to contain the separator tube battery.

A major improvement was made when the tangential blowdown line of the former Mark I tube was replaced by the annular blowdown. In the new Mark III tube, an annulus surrounds the bottom of the tube, with a $\frac{1}{4}$ in. gap between the cylindrical barrel and the flat bottom of the tube. A radial blowdown line, $\frac{3}{4}$ in. in diameter, carries the separated ash away from the annulus. Particles larger in diameter than $\frac{1}{4}$ in. cannot pass under the lip leading to the annulus; instead, they continue to swirl around in the tube until they are reduced by attrition to a size small enough to pass under the lip and out through the blowdown line.

Adequate Air Flow Vital

The most important factor in the efficient operation of the Dunlab separator tube is maintenance of an adequate air flow through the blowdown line. As long

[†]For the results of this test, which was conducted during 1952, see *Railway Age*, April 20, 1953, page 86.



Components of the coal pump developed by the Locomotive Development Committee.

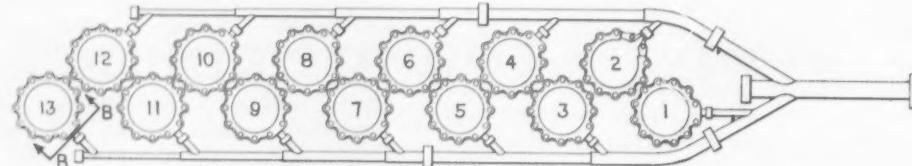
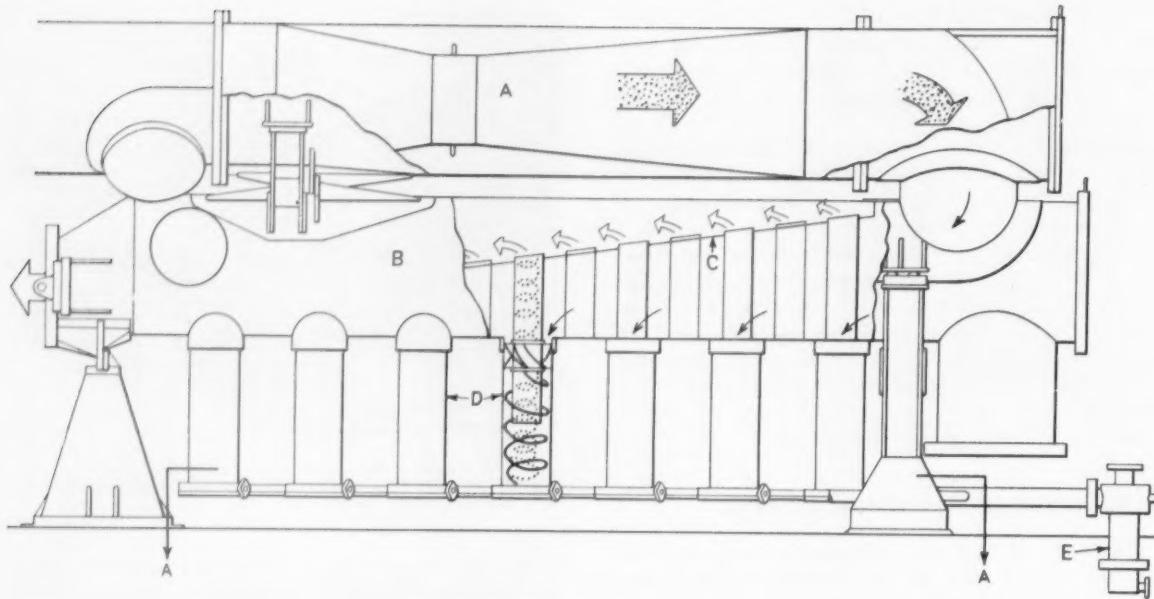
as this flow remains above 12 cfm, the tube will operate at maximum efficiency. If the blowdown flow falls below 10 cfm, some of the separated dust will be re-entrained and carried out through the cleaned air discharge. The loss of efficiency which occurred with the Mark I tubes during the 750-hour test was apparently caused by gradual reduction of the blowdown flow below 10 cfm required to maintain maximum efficiency.

Since the total air flow to the turbine is almost 40,000 cfm, and each Dunlab tube can handle 1,500 cfm, the new Multitube separator uses two 13-tube batteries in parallel. The body of each separator consists of a horizontal cylinder 28 in. in diameter which is divided by a slope sheet into a lower dusty gas inlet and an upper cleaned gas outlet chamber. The ash-laden hot gas from the combustion chamber enters the lower part of the separator through a tee, and finds that the only exit is through the Dunlab tubes. Vanes at the entrance of each tube cause the air and ash to spin rapidly and the resulting centrifugal force throws the ash towards the tube wall. Most of the ash particles enter the annulus and flow out with the blowdown stream, while the cleaned air and the ultrafine ash particles spin up through the discharge tube and proceed to the turbine.

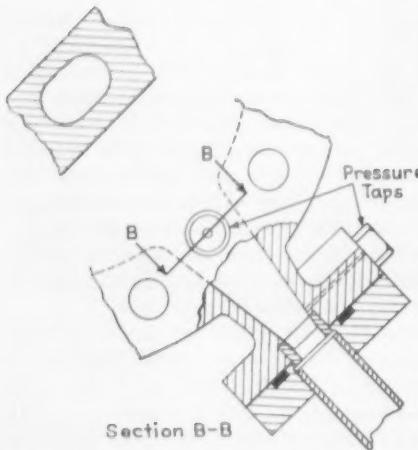
The blowdown lines are connected into manifolds. In order to equalize the blowdown flows, each line is provided with a bushing which is inserted in the outlet flange. These bushings are graduated in inside diameter, with the larger bushings inserted in the tubes which are farthest away from the separator inlet. The manifolds are connected to the ash concentrators which divert the ash and a portion of the blowdown air to the ash disposal system, while the remainder of the air is discharged through a nozzle to the stack.

Instrumentation

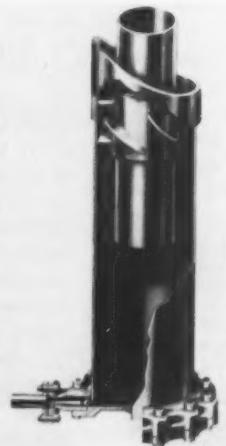
In preparation for the next series of turbine tests, a number of improvements have been made in the test-plant instrumentation. A large Venturi tube has been installed in the compressor air intake line to permit measurement of the total airflow into the plant. Venturi tubes have also been installed in the combustor exten-



Section A-A

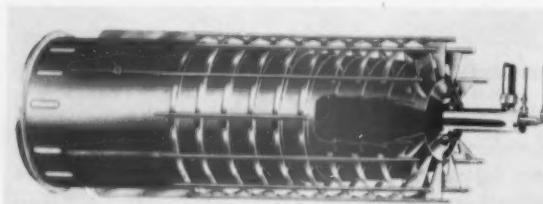


Detail of the blowdown connection of the Mark III Dunlab separator tube.



The multiple fly ash separator to be tested during 1954. Ash laden gas from the combustor passes through the Venturi tube *A* to the separator chamber *B*, entering below the diagonal partition *C* and swirling down through the Dunlab tubes *D* where ash is deposited and blown out from the bottoms of the tubes through manifolds to the ash concentrator *E* and thence to the ash disposal system. The gas, with some ultra-fine ash, flows upward through the inner tubes of *D* to the upper compartment of *B* and then to the left toward the turbine.

LEFT—The Mark III Dunlab fly-ash separator tube with annular blowdown.



The ring-supported, film-cooled, stainless-steel combustor for the coal-burning gas-turbine.

sions leading to each of the separator batteries so that the air flow through the two halves of the system can be measured to determine whether the flow is equally divided.

Continuous determination of separator performance will be of the utmost importance during the coming test. For this reason, ash samplers have been installed at the entrance of each separator battery, in addition to the samplers at the turbine inlets. Comparison of the weights of ash caught at these points during a given time interval will enable the operators to calculate the actual separator efficiency for that interval. Since there is a close correla-

tion between the amount of ash entering the turbine and the particle size distribution, samples of the ash from the turbine inlets will be examined frequently under a microscope, to check the percentage of plus 10 and plus 20 micron particles.

New Turbine Blades

At the conclusion of the 750-hour test it was found that new blades were needed in the first four rows of the 4,250-hp gas turbine, and the American Locomotive Company assumed the responsibility for producing and installing the new blades.

The re-assembly of the turbine has been done by Alco personnel under the direction of the L.D.C. staff. Extreme care has been taken to establish the proper clearances between the stationary and moving parts of the turbine and compressor.

Test-Plant Alterations

The only major change in the turbine test plant is the elimination of the regenerator. This is expected to increase the full-load output of the plant by some 300 hp at the expense of a 500-lb-per-hr increase in the coal rate.

Inspection of the turbine blading will also be greatly facilitated. The value of a regenerator for locomotive service with low cost fuels depends largely upon reducing its first cost and maintenance expense to a very low figure. Since the performance of the plant with a regenerator had been determined during the 750-hour test, it was decided by the Operations Committee to see how the plant will function during the next tests without the regenerator.

1954 Turbine Test Program

The 750-hour test showed that the L.D.C. 4,250-hp turbine could carry full load and run as smoothly on coal as on oil. The coal feeding and pumping equipment did an adequate job and the combustors functioned satisfactorily. The fly ash separation equipment did not measure up to its requirements and excessive blade erosion took place. The forthcoming test program will be devoted primarily to learning whether the new multtube separators with Mark III Dunlab tubes can give adequate protection to the turbine blades.

The 1954 test program will begin with a calibration of the new Multitube separators. After the plant has been checked out, and the necessary expansion readings have been taken, a test will be run during which fly ash of known characteristics will be fed through the burners into the combustors. The ash will be fed from the weight tank and coal pump formerly used.

The next turbine test period has been tentatively set at 250 hours, with daily runs of 10 to 15 hours, to be followed by a 500-hour test. Turbine inlet temperature will be held at about 1,250 F with turbine speed set to give at least 3,000 shaft hp. Plant performance will be checked at hourly intervals with accurate determinations of compressor air flow, coal consumption, and shaft horsepower. Separator efficiency will be checked by weighing the amounts of dust collected at the inlet

and outlet sampling stations. The erosiveness of the ash entering the turbine will be recorded continuously by the radioactive method. Every possible precaution will be taken to prevent operation of the turbine under conditions which might cause blade damage. Whenever the turbine is shut down and cooled off, photographs of the first and last row blading will be taken with a camera equipped with a 60-second developing attachment.

Economic Considerations

When the Locomotive Development Committee began its work in 1945, its member railroads were paying, on the average, \$3.30 per ton for coal and 6.8 cents per gallon for diesel fuel. Since 1945, prices for all locomotive fuels have risen—coal to an average of \$5.50 per ton (66%), diesel fuel to 10.6 cents per gallon (52%). A million Btu in the form of coal now cost 22 cents; in the form of diesel fuel the cost is 86.5 cents.

Most fuel economists agree that the increasing demand for all kinds of petroleum products will force distillate fuel prices upward. The price of coal is not expected to rise as rapidly.

The fuel consumption of a typical three-unit 4,500-hp diesel-electric locomotive power plant ranges from about 10 gallons per hour at idling to 270 gallons per hour at full power. The L.D.C. gas turbine, during its 1952 tests with the regenerator in place, required about 1,400 lb of coal per hour at idling (80-deg F ambient air, 1,000 ft altitude). At maximum load (4,250 shaft hp) the coal consumption was 4,300 lb per hour or 1.025 lb per hp hr.

The hourly fuel-consumption of a working locomotive depends upon its *load factor* (the work actually done per hour, divided by the work done per hour, divided by the work done per hour if plant ran at full load).

The table shows fuel consumptions of 4,500-hp locomotive power plants for various load factors, calculated as explained in the economic analysis submitted to the L.D.C. by the writers in July, 1952.

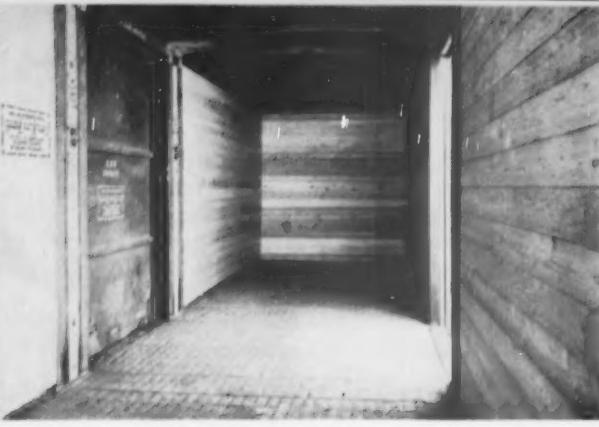
Assuming further that the average speed for freight locomotives is 21 mph, fuel consumption per mile can be estimated with the results shown in the table. At 50 per cent load factor, a three-unit, 4,500-hp diesel-electric locomotive will use about 6.6 gallons per mile at a cost of \$0.69; a gas-turbine without a regenerator would burn about 150 lb of bituminous coal per mile at a cost of \$0.42.

For 84,000 miles per year, the coal bill for the gas-turbine would be \$35,000; the fuel-oil bill for the diesel would be \$58,500. If coal rises to \$6.00 per ton, for the conditions outlined above, the annual turbine coal bill would go up to \$38,200. If diesel fuel goes to 12 cents per gallon, the annual cost would be \$66,000.

FUEL CONSUMPTION PER HOUR AND PER MILE

4,500-HP FREIGHT LOCOMOTIVES AT 21 MPH

Load factor, per cent	45	50	55	60	65	70
Diesel-electric						
Fuel rate, gal per hour	125.1	138.2	151.2	164.4	177.2	190.2
gal per mile	5.96	6.58	7.20	7.83	8.44	9.06
Gas turbine, no regenerator						
Coal rate, lb per hour	2,900	3,160	3,460	3,720	3,940	4,100
lb per mile	139	151	165	178	188	196



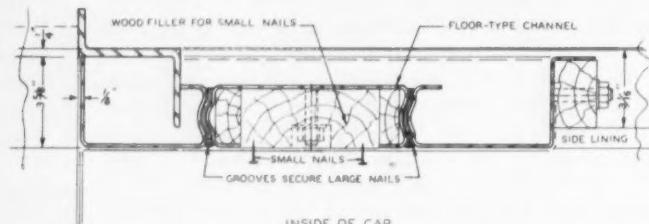
RECONDITIONED 20-YEAR-OLD cars have nailable steel flooring as well as door posts.



WOOD FILLER STRIP that holds the small nails is easily renewed by loosening a couple of nuts.



THE GROOVES SECURE the large nails that hold the wooden cross strips for the paper grain doors.



CONSTRUCTION of the nailable post on one side of door opening.

Nailable Steel Doorposts

... APPLIED BY THE CGW

Twenty box cars of the Chicago Great Western are being equipped at the road's Oelwein, Iowa, shops with Nailable Steel Doorposts in the first general service application of this newly developed product of the Great Lakes Steel Corporation. The principal purpose of the new doorposts is to eliminate the damage to the side lining that may result from the use of paper grain doors.

The steel sections also serve two substantial secondary purposes. They make a stable and rigid anchor for attaching wood bulkheads. The steel door posts also strengthen the doorpost area when, as in this case, they are applied to older cars. Ten of the cars to which the steel doorposts were applied were built in 1931, ten in 1935. All are 40½-ft 50-ton all steel box cars.

The new doorposts consist of three steel sections on each side of the doorway, as shown in the sketch. The center section is a channel identical to that used in Nailable Steel Flooring. The other two sections are shaped to suit the construction of the particular design of car to which the application is made. The edge of

each of the outer sections next to the edge of the channel in the center is slightly curved to mate with the similarly curved channel side and form the nailing groove.

These grooves hold the large nails that secure the wooden cross strips of paper grain doors. The smaller nails which secure the paper in between the wood strips are nailed into a wood filler piece. This filler is attached by studs to the channel, which is placed concave on the side of the car, i.e., with the web against the side of the car and the flanges protruding toward the inside of the car, or the opposite to the way the channel is placed when used for flooring. As the nailing groove of the steel sections takes the large nails, the life of the wood nailing filler is prolonged. Furthermore, replacement of this filler is a simple matter when it has become deteriorated from using many small nails. It is merely a matter of loosening the nuts on the studs and slipping a new filler in place.

The three sections are welded to the side sill, the carline and to the cars' Nailable Steel Flooring.

How Goes the Direct Route Plan?

Some informed opinion favors extension to cover other equipment in addition to box cars—Demand noted for changes in allocations of ownerships through gateways

By G. C. RANDALL

District manager, retired
Car Service Division, AAR

Based on a small cross-section of railroad opinion, it seems that the so-called direct route plan (Special Car Order 90 of the AAR Car Service Division, effective July 1, 1953) for disposing of unneeded empty "Rule 3" box cars is being rather favorably received. However, there are some doubts as to its efficacy and fairness to all roads. Of five transportation officers queried by *Railway Age* none expressed outright opposition to the plan. Two unequivocally favor its extension to gondolas and flats. Three think it's too early yet to tell just how beneficial the plan has been to their roads.

A strong backer of the direct route plan is F. J. Orner, superintendent freight car distribution of the New Haven. Mr. Orner wrote:

"The effect of the order on the New Haven has been generally favorable, and we favor its being made permanent. We also would look favorably on its extension to other types of equipment. . . . The order has . . . reduced requests on the car service office for home routes, as well as the expense of securing short route information from other roads. The elimination of this work tends to speed up the movement of cars. . . ."

"The first few weeks of operation under the order indicated an apparent reduction in empty car-miles, but comparison is made difficult by the abnormally heavy return of empty New Haven box cars since then.

"The application of the order to the New Haven has not developed any apparent flaws or hardships. Our experience has been favorable."

According to C. C. Robinson, superintendent of car service of the Monon:

"S.O. 90 has been of great benefit during the past three months of easy box car supply. During December 1953 and early January 1954, we disposed of surplus foreign box more rapidly and with less effort and empty mileage than in any previous period.

"S.O. 90, by substituting fixed channels for movements of empty cars, at times affects car supply by preventing return of empties to us which we could use, and by sending to us cars of ownerships which we cannot load, thus causing some cross-haul of empties or violations of car service rules. However, we believe the difficulties to be of a minor nature compared with benefits received in terms of reduced car-miles and more prompt disposition of surplus box cars of Rule 3 ownership.

"If the questions of continuation of S.O. 90 beyond its present one-year trial period or its extension to other types of equipment, other than hoppers, are placed

before member roads for vote, we will favor both proposals."

On the Santa Fe, opinion as to the value of the direct route plan has not yet crystallized. Said D. A. Baumgartner, superintendent freight transportation:

"We are maintaining a record of loaded and empty foreign box cars, by direction, through eight important terminals for August, October, December, February, April and June of 1952, 1953 and 1954. We are also maintaining a record of our box car loadings, by weeks, before and after inauguration of S.O. 90, and system and foreign box cars on line, shortages, etc. The reason for keeping the record of the movement of foreign loaded and empty box cars through selected terminals is a hope that it will tell us whether or not the percentage of empty to loaded has increased or decreased.

"It is not possible to tell what our position [will be] with respect to making the order permanent or extending it to other types of equipment. The record to date has not been sufficiently conclusive . . . our car hire account does not reflect definitely whether or not there has been any increase in the debit or credit account . . . there has been some reduction in man-hours devoted to furnishing home routes."

Too Early to Judge

C. H. Grant, general superintendent transportation, Southern Pacific, stated that it's still too early to judge the plan. "Indications are," he said, "that S.O. 90 is working out pretty well. It is unfortunate that [there has been a] national decline in business, as that, coupled with the increase in per diem rate, [has tended] to cause prompt return of cars to their owners, making it hard to determine effects of the order.

"A cursory review has indicated that S.O. 90 is advantageous to us, in that there is a definite increase of SP box cars returning to us through the Ogden gateway instead of El Paso. This reduces empty car-miles in getting cars to the loading areas. Whether this is a result of S.O. 90 or of the desire of other roads to rid their lines of per diem cars is a question that can only be developed by complete analysis. . . ."

"To date there has been no apparent reduction in work from a car record standpoint, although undoubtedly there has been some. . . ."

"Indications are that the plan has more advantages than disadvantages, and will result in increased efficiency in car handling; and an avenue to keep a larger percentage of cars on home rails."

E. G. Trobaugh, car accountant of the Missouri Pacific, and chairman of the Committee on Records, Operating Transportation Division, AAR, generally favors the plan.

He wrote: "From the national viewpoint . . . the plan is a good one, and results in car service economy. . . . Any plan which provides immediate disposition for unneeded cars certainly saves empty car mileage, delays to cars and switching expense. . . . Therefore, in my opinion, the plan should be made permanent and should be extended to other types of equipment, provided an equitable allocation for outlet of cars can be made for individual railroads."

Officers of the AAR Car Service Division are of the opinion that results of the order have been good. They state that requests for adjustments of inequities have been less than they had reason to expect in view of the far-reaching effect of the order and its complete disregard of service routes, plus the fact that no precedents or bases existed by which the measure of the order's effect upon a road's volume of empty cars to be moved could be predetermined. The CSD expects that adjustments made, and being made, will go far toward eliminating inequities.

November Drop a Severe Test

The sharp drop in carloadings last November (28 per cent below November 1952), which continued in December, brought about a severe test of the practicability of the direct route plan. Foreign box cars were surplus on nearly all roads and were hurriedly rushed home.

Home box cars on home roads increased from 30.4 per cent of ownership on November 1, 1953, to 34.7 per cent on December 1, and to 45.2 per cent on January 1, 1954. Thus, some 108,200 box cars went home in two months, bringing the figure of home box cars on owners' rails to the highest figure since January 1, 1942.

In the same two months of 1952, the number of box cars moved to home rails was about 38,000. This heavy movement of box cars homeward shows up in the interchange between Eastern and Western roads at Chicago.

FLOW OF BOX CARS AT CHICAGO

December-January 1953-4 vs December-January 1952-3

Period	West to East			East to West		
	Loads	Empties	Total	Loads	Empties	Total
1953-4	143,780	61,344	205,124	133,958	85,306	219,264
1952-3	154,041	50,350	204,391	146,504	69,366	215,870
	-10,261	+10,994	+ 733	-12,546	+15,940	+ 3,394
	-6.67%	+21.82%	+ 0.36%	-8.57%	+22.35%	+1.58%

One must go back to the fall of 1937 to find a year in which relocations of box cars to owner's rails were fairly comparable with those of 1953. By December 31, 1937, the percentage of box cars on home rails had increased 15.5 per cent from the October 1 figure. In the same period of 1953 the increase was 14.6 per cent. In the same periods, the ratio of empty car-miles (for all equipment classes) to total car-miles for Class I roads was:

	1937	1953
October	37.4%	35.2%
November	40.1%	37.7%
December	40.6%	39.4%

Benchmarks

and Yardsticks

ADVERTISING IS ONE of the favorite targets of the critics of the American way of doing things—and, it must be admitted, some kinds of popular advertising are hard to defend. But, in the field of industry, advertising is not only *an* educational force; it is probably directly and indirectly *the* principal source of educational activity toward improved methods and performance.

The leading medium of current information on industry progress is, probably, the industry press. The price of industry publications to subscribers is practically always only a fraction of their total cost of production—the difference being made up by the revenue the publisher derives from the sale of advertising space. In advertising their products, therefore, the manufacturers not only disseminate useful information about the application of their own products, but, indirectly, their expenditures support the cost of editorial articles which pass along much additional information of value to the readers in their professional work—information in which the advertisers have no direct interest.

A publication such as this one, for instance, could not be priced at less than \$25 a year—except for the advertising that it publishes. At such a high price—which few subscribers would care to pay—the number of subscriptions would decline, driving the average cost of each subscription still higher. The conclusion is inescapable, therefore, that—except for advertising—industry publications, as we have them in America, either could not exist at all, or would at best be a costly product.

Such publications could not, under those conditions, be the source of widespread education among supervisory forces in industry that they are today. And the tempo of industry progress would be proportionately slowed down. One of the principal reasons for America's industrial leadership has undoubtedly been the fact that American industries "have no secrets"—practically all of them being willing to make their progress generally known, through their industry press. And the foundation upon which this whole educational structure is erected is the willingness of manufacturers to advertise their products in industry magazines and newspapers.

Your reporter is, perhaps, prejudiced in favor of industry advertising—that is, advertising directed to professional (and not merely casual) buyers. Such advertising is usually factual and truly informative. A purchaser of cigarettes or chewing gum or underwear may be influenced by appeals to emotion and instinct, but it is not generally effective to try to sell tools to people who are going to use them to earn a living, by using non-factual arguments.

J.G.L.

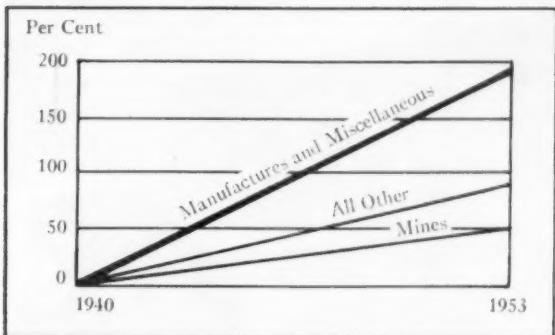
Norfolk and Western RAILWAY COMPANY

SUMMARY OF ANNUAL REPORT FOR 1953

Gross operating revenues for the year declined approximately \$6 million, or 3 per cent, under 1952, mainly because export coal shipments were off about three million tons. Traffic other than coal held up well, with revenues from this source exceeding the record high of 1952.

The following graph shows percentagewise the progress made since 1940 in expanding traffic revenues from manufactures and miscellaneous commodities:

PERCENTAGE INCREASE IN REVENUES



Taxes totaled \$37,076,000, a decrease of \$2,481,000, due to reduced earnings and additional amortization of emergency defense facilities. Taxes amounted to \$1,780 for each employee, \$6.59 for each share of Common Stock and 20 per cent of operating revenues.

Outstanding funded debt amounted to \$35,792,000, which represented 18.04 per cent of total capitalization and only 5.26 per cent of investment in properties. It is estimated that the assets of a voluntary sinking fund, together with Company bonds in the treasury purchased and held for later transfer to the fund, with investment of income, will be sufficient to retire the funded debt when due. The Company has no equipment obligations.

Dividends on outstanding stock totaled \$20,571,000, which was 74 per cent of Balance of Income. Dividends at the annual rate of \$1.00 a share were paid on Adjustment Preferred Stock and \$3.50 a share on Common Stock. The latter included an extra dividend of \$.50. Dividends have been paid on Adjustment Preferred Stock for 57 consecutive years and on Common Stock for 53 consecutive years.

During the year, 120 new industries and additions to existing plants, with a total capital investment of \$116,490,000, employing 11,350 persons, were constructed in Norfolk and Western territory.

Capital expenditures for additions and improvements to fixed properties of the railway were \$9,795,000 and for new equipment and equipment



betterments \$22,557,000, a total of \$32,352,000. Since 1945, gross capital expenditures for improvements, modernization and equipment have amounted to \$203,825,000, all of which were made without borrowing money. Authorized capital expenditures uncompleted at the beginning of 1954 totaled approximately \$13,660,000.

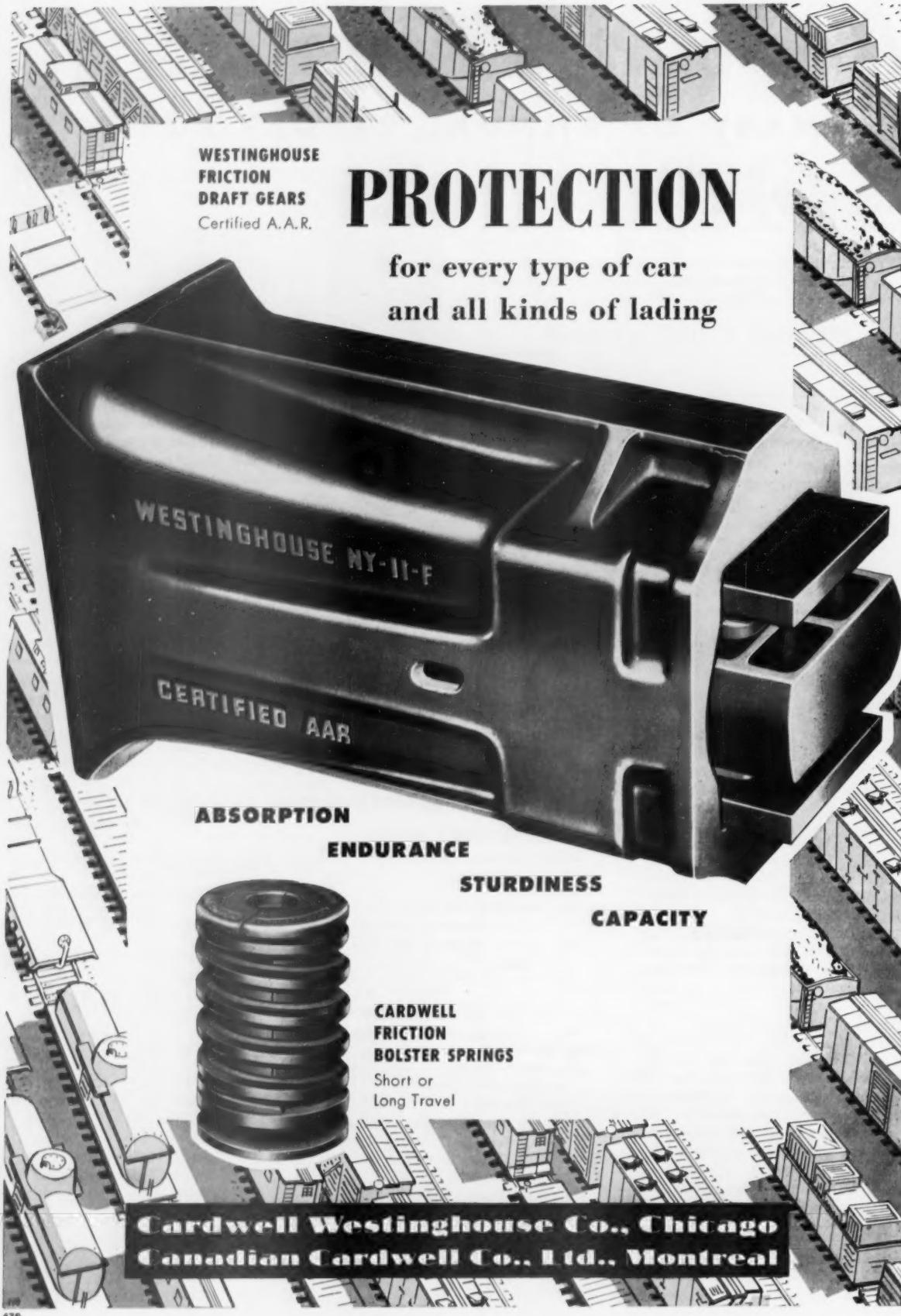
New equipment for delivery in 1954 consists of 581 gondola cars, 500 box cars and 25 flat cars. Development of two types of coal-burning turbine electric locomotives is progressing.

The Company achieved outstanding efficiency records during the year. In gross ton miles per train hour — one of the best indices — a record peak of 71,991 was reached. The transportation ratio of 30.42 per cent was among the lowest in the industry. The percentage of gross revenues brought down to net income — 14.81 — was exceptionally high.

The Management believes that, notwithstanding increased competition from other fuels, coal will continue to supply a substantial part of the Nation's energy and fuel requirements and that the Company will continue to be one of the principal transporters of Bituminous Coal.

CONDENSED INCOME STATEMENT

	1953	Comparison With 1952	Per Cent	
REVENUES AND OTHER INCOME:				
Freight—Bituminous Coal.....	\$103,504,435	Dec. \$6,314,691	6	
Other.....	73,036,908	Inc. 2,110,728	3	
Passenger.....	4,913,775	Dec. 563,866	10	
Mail, Express and Miscellaneous.....	8,105,151	Dec. 1,322,469	14	
Total Railway Operating Revenues.....	\$189,560,269	Dec. \$6,090,298	3	
Rent Income—Equipment and Joint Facilities — Net.....	11,692,489	Inc. 658,504	6	
Other Income—Net.....	1,781,613	Dec. 493,684	22	
Total.....	\$203,034,371	Dec. \$5,925,478	3	
EXPENSES AND OTHER CHARGES:				
Way and Structures—Repairs and Maintenance.....	\$27,132,258	Dec. \$1,583,246	6	
Equipment—Repairs and Maintenance.....	40,229,811	Inc. 26,519		
Transportation—Operations.....	57,661,174	Dec. 687,931	1	
Other Expenses.....	11,426,385	Inc. 113,929	1	
Total Railway Operating Expenses.....	\$136,449,628	Dec. \$2,130,729	2	
Taxes—Federal.....	\$28,696,871			
State, County and Local.....	8,378,784	37,075,655	Dec. 2,481,142	6
Interest on Funded Debt.....		1,431,668	Dec. 90,116	6
Total.....		\$174,956,981	Dec. \$4,701,987	3
NET INCOME.....	\$ 28,077,420	Dec. \$1,223,491	4	
SINKING AND OTHER RESERVE FUNDS—APPROPRIATIONS.....				
	450,876	Dec. 700,690	61	
BALANCE OF INCOME.....	\$ 27,626,544	Dec. \$522,801	2	



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and all kinds of lading

ABSORPTION

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STURDINESS

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FRICTION
BOLSTER SPRINGS**
Short or
Long Travel

**Cardwell Westinghouse Co., Chicago
Canadian Cardwell Co., Ltd., Montreal**

Financial

White Won't Work for Young

Proxy statements mailed to NYC shareholders by both sides in contest for control of the railroad

The board of directors of the New York Central at his request has revised the terms of its contract with William White, NYC president, to give Mr. White the right to sever his relations with the company and forego all future payments under the contract if Robert R. Young and his associates secure control of the railroad.

The revision, Mr. White said at a press conference last week, was "demanded" by him and "reluctantly agreed to" by the board. "I am so convinced," he added, "that Mr. Young's presence in the affairs of the Central would be harmful to the property that I insist upon having the right of giving up my association with the company and what are to me very valuable rights, because I am not a wealthy man and I have to continue to work for a living."

Mr. White described the possibility of Mr. Young assuming control of the NYC as "unlikely," and emphasized that "under no circumstances would I work either with or for Mr. Young."

Announcement of the change in the contract drew the following comment from Mr. Young: "Obviously the White contract was embarrassing to the board. Mr. White's request to the New York Central board to be relieved of his contract, worth a million dollars to him, undoubtedly, was at the board's request. That is the way those things work. It is too bad the bankers on the board do not also relieve the company of their own embarrassing connection in relations with the company."

Proxy Statements — Earlier, the NYC management and Mr. Young and his associates had mailed to NYC stockholders their respective proxy statements. Stockholders of record at 3 p.m. on April 19 will be entitled to vote at the Albany, N. Y., annual meeting on May 26. Outstanding NYC shares, it was said, total 6,447,410.

The management's proxy statement disclosed that directors of the road, all of whom were nominated for reelection, own or directly represent 106,622 shares of the company's stock and \$11,959,000 principal amount of obligations of the road and its subsidiaries. Mr. White, in a letter accompanying the statement, pointed out that this share total by no means represents the Central management's aggregate voting strength.

Mr. White's letter told shareholders that the progress made by "the experienced, professional type of management which has now been in office since August 1, 1952," should not be interrupted. "We may concede Mr. Young's talents as a promoter and

speculator," he continued. "In our opinion these qualities contribute far more to Mr. Young's financial well-being, however, than to the good of the railroad. . . As a railroad executive, Mr. Young has been found to be lavish in his ideas and the expenditure of money."

Statements and promises made by Mr. Young about what he would do for the NYC, Mr. White said, "when carefully evaluated, are shown to be conceived without relevance to practical situations and are designed to attract publicity and the approval of uninformed people, rather than to benefit your company." Mr. White added that ideas which Mr. Young "inaugurated with much fanfare on the Chesapeake & Ohio were found to be impractical and expensive and were quietly dropped."

Alleghany Proxy — Mr. Young, in a letter accompanying the proxy statement of his group, asked each "fellow shareholder" to "put us to work to (Continued on page 55)

"Cold" metal build-up helps beat skyrocketing replacement costs on 28 major railroads

Metalizing helps railway men save time and money in mechanical maintenance. New material simplifies surface preparation—improves bond. One road reports yearly savings of \$100,000 to \$200,000.

Though metallizing has long been used by U. S. railroads, there has been a tremendous increase in its usage as a standardized maintenance process in the last few years. Users tell us there are two reasons behind this growth—sharp increases in replacement parts costs and requirements, plus the development of a new metallizing material that has enormously simplified and speeded the previously complex process of surface preparation, as well as providing a superior, reliable bond for the metallized build-up.

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illustrates and describes
standardized metallizing
procedures in use
by 28 major railroads.
Chart shows specific
savings made in one
typical railway main-
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Railroads that have compared INTERNATIONAL pricing with their own caboose-building figures have quickly recognized INTERNATIONAL'S economy.

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International

RAILWAY CAR CO.

General Offices — Buffalo, N.Y.

Financial

(Continued from page 53)
make your stock more valuable." "We," his letter said, "have bought stock with a present market value of \$25,000,000 in the faith that we can."

"Before the New York Security Analysts on March 15," Mr. Young continued, "the best hope Mr. White held out for Central shareholders was a possible \$2 annual dividend within four or five years, or a little less. If this had been our view we would not have acquired our stock holdings."

Mr. Young said affairs of the NYC are in a "sorry state," which "is basically due to the fact that its present board together owned, according to last year's proxy statement, only 13,750 shares of stock or less than 1/4 of 1%."

If a new board is elected, Mr. Young will "offer his services to the stockholders for one dollar a year as chairman of the board, but not as principal operating officer." He said he and his associates "have bought over a million shares of Central stock in the full faith that under sound management it can again sell far above its present price and pay far in excess of its present dividends."

South Shore Proxy Contest Won by Management

For the second time in two years, management of the Chicago South Shore & South Bend has won a proxy battle with William H. Rubin, a Chicago attorney and a vice-president of the Morrison Hotel Corporation. The latest victory came at the railroad's recent annual meeting, when all nine directors nominated by management were reelected by a majority of more than five to one.

Mr. Rubin has sought to have directors elected by cumulative voting; to have the road's stock listed on an exchange; and to eliminate from the road's charter a provision that requires a majority of directors to be residents of Indiana. President Jay Samuel Hartt has pointed out to stockholders that Mr. Rubin's latter proposal would be contrary to Indiana statutes, which specifically require such a composition of the board, since the railroad is incorporated under Indiana laws.

Lead Increased—At the recent meeting, 235,321 shares were voted for the management slate of directors. Directors nominated by Mr. Rubin received the votes of 44,043 shares. A year ago the management voted proxies for 177,543 shares, and Mr. Rubin received the vote of 87,035 shares. A resolution to provide for cumulative voting in election of directors was opposed by 72.2% of shares outstanding (311,580) and approved by 17.3%. Another 10.5% of the shares were not represented at the latest meeting.

Alleghany Corporation.—*Annual Report.*—Net income in 1953, before profit on security transactions, was \$244,222, compared with \$861,652 in the preceding year, according to the annual report. Net profit on security transactions last year amounted to \$6,452,830, compared with \$50,806 in 1952.

Maine Central.—*Sells Highway Subsidiary's Stock.*—An agreement providing for sale of the Maine Central's stock in its highway subsidiary, the Maine Central Transportation Company, to New England Greyhound Lines, Inc., has been announced. The purchase price was not made public

and consummation of the transaction depends upon ICC approval.

Missouri Pacific.—*Reorganization Comment.*—Guy A. Thompson, trustee of the Missouri Pacific Lines, views the recent U.S. Supreme Court opinion in the Florida East Coast case (*Railway Age*, April 12, page 7), as a "green light" rather than a "road block" in the path of MP system reorganization under section 77 of the Bankruptcy Act. In a statement issued at St. Louis, April 7, Mr. Thompson said:

"The question for decision in the FEC case was whether the Interstate Commerce Commission could, under section 77, com-

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From every standpoint of solid construction, easy maintenance and efficient sanitary cooling—a Mink Water Cooler is your best buy for a steady supply of clean cool water!

Mink Water Coolers are ruggedly built, for long dependable service. They feature stainless steel construction at every point where contamination could occur. Their copper immersion coils provide instant cooling, assure a constant supply of cool water. Every part of a Mink Water Cooler is accessible for quick, easy cleaning.

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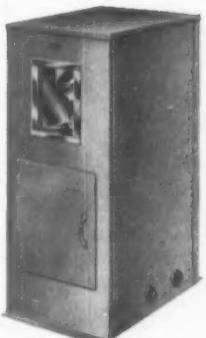
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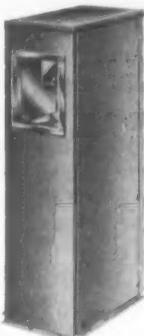
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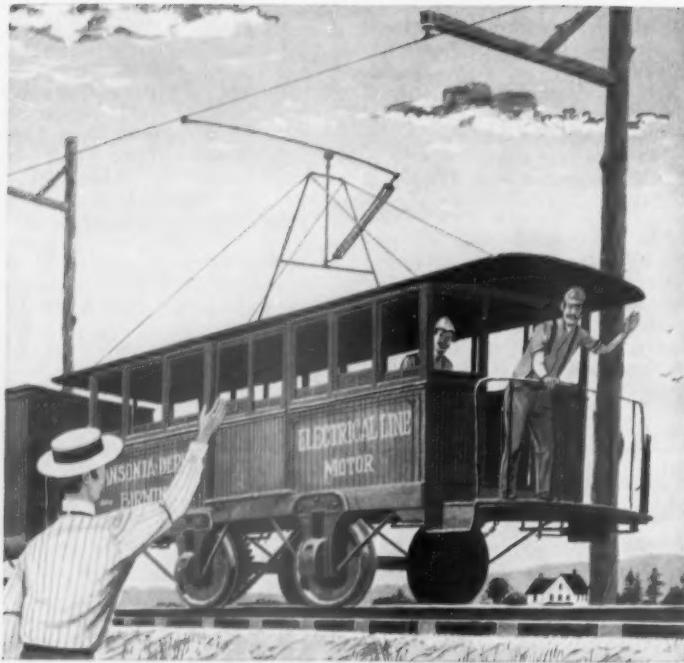
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pel the FEC, a road in bankruptcy under section 77, to merge with the Atlantic Coast Line, a road not in bankruptcy and having no prior connection with the FEC. As stated by the court in the first sentence of its opinion: 'The sole question for decision in this case is whether the ICC has the power under section 77 of the bankruptcy act to submit a plan of reorganization to a district court whereby a debtor railroad would be compelled to merge with another railroad having no prior connection with the debtor.' It held that it could not. The opinion clearly and emphatically distinguished such case from a situation such as presented in the Missouri Pacific case, in which the plan for merger of the MP and its subsidiaries has been initiated and proposed by them. The opinion refers to such a merger as 'essentially an internal reorganization in that it is merely a recasting of a de facto single enterprise.'

"We have put a great deal of effort in the negotiations for a settlement of the MP case and I believe we are close to an agreement with most of the interested parties. I plan to go forward with this effort to settle the case, which I believe is in the best interest of the security holders and in the public interest."

NEW HAVEN CONTROL STILL UNDECIDED AT PRESS TIME

Up to a long-delayed deadline for this issue of *Railway Age*, the struggle for control of the New York, New Haven & Hartford was still a "no decision" contest.

The annual stockholders' meeting, with control of the road as the principal issue at stake, began on schedule at 2 p.m. Wednesday, April 14, and was still in session, after six separate recesses, at 2 a.m. Friday, April 16. Closeness of the contest was indicated by the fact that, up to the latter hour, neither of the contending groups had claimed ability to elect more than 13 or 14 of the full slate of 21 directors which each side had nominated.

Opponents in the struggle were the road's present management, led by incumbent President Frederic C. Dumaine, Jr., and a group of insurgent directors and stockholders, led by Patrick B. McGinnis, New York financier and former board chairman of the Norfolk Southern and the Central of Georgia.

The contest was complicated by the fact that, under the road's cumulative voting provision, each of the 489,776 shares of preferred stock and 525,789 shares of common stock was entitled to one vote for each of the 21 directors to be elected—a grand total of more than 21,000,000 votes. A further complicating factor is the provision of the New Haven's charter and by-laws which requires that 14 of the 21 directors be residents of New England, and that one of these be from Rhode Island, and at least one from Massachusetts.

REVENUES AND EXPENSES OF RAILWAYS

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MONTH OF FEBRUARY AND TWO MONTHS OF CALENDAR YEAR 1954

The Public's "All-Weather" Friend

By Hungersford

The idea for this cartoon, drawn by Mr. Hungersford, won a prize for

Mr. BUGGERI

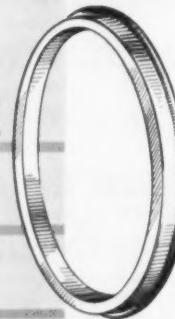
In the Edgewater Cartoon Idea Contest, held during the K.S.M.A. Convention at Atlantic City in June 1953.

We will be glad to send you enlarged copies of this Hungersford cartoon (without advertising copy) for posting on your office and shop bulletin boards, or a cut for your company magazine, at cost.



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REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands; i.e., with last three digits omitted)

MONTH OF FEBRUARY AND TWO MONTHS OF CALENDAR YEAR 1954

Name of Road	Average milesage operated during period	Operating Revenues												Operating Expenses													
		Freight				Pass.				Total (in mils.)				Maint. Way and Structures				Deprec. and Repairs				Total					
		Total	Fare	Freight	Other	Total	Pass.	Freight	Other	Total	Pass.	Freight	Other	Total	Pass.	Freight	Other	Total	Pass.	Freight	Other	Total	Pass.	Freight	Other		
Colorado & Southern	Feb.	848	55	1,099	1,180	134	115	33	211	177	42	30	388	1954	1953	1953	1954	1953	1953	1953	1953	1953	1953	1953	1953	1953	
	2 mos.	729	119	1,440	2,443	241	239	51	414	358	62	60	850	1,674	1,677	807	707	194	76	194	76	194	76	194	76	194	
Fl. Worth & Denver	Feb.	1,038	104	1,159	1,095	272	256	61	216	218	40	57	1,314	68.4	68.4	466	466	112	122	122	122	122	122	122	122	122	
Colorado & Wyoming	Feb.	1,038	225	3,660	4,068	678	548	99	446	506	40	116	1,244	72.9	72.9	69.0	69.0	932	122	229	122	229	122	229	122	229	
	2 mos.	40	42	273	273	309	318	2	222	30	11	1	116	67.1	67.1	52.2	52.2	72.3	33	58	33	58	33	58	33	58	
Columbus & Greenville	Feb.	168	142	151	174	25	30	4	22	26	62	5	44	115	115	124	124	71.0	71.0	71.0	71.0	71.0	71.0	71.0	71.0	71.0	
	2 mos.	793	3,538	1,533	3,849	4,333	59	61	7	49	743	181	177	381	381	248	248	322	322	322	322	322	322	322	322	322	
Delaware & Hudson	Feb.	1,490	119	1,159	1,334	7,748	8,723	1,130	1,282	105	1,710	1,619	1,619	1,497	1,497	80.3	80.3	103	103	103	103	103	103	103	103		
	2 mos.	962	1,437	1,367	1,732	6,937	6,753	1,551	1,761	141	1,720	1,625	1,625	1,492	1,492	60.7	60.7	84.8	84.8	84.8	84.8	84.8	84.8	84.8	84.8		
Delaware, Lackawanna & Western	Feb.	1,490	225	1,099	1,406	678	678	1,239	1,355	1,563	274	2,369	2,445	2,445	2,369	2,369	174	174	2,882	2,882	2,882	2,882	2,882	2,882	2,882	2,882	
	2 mos.	40	42	273	273	459	614	25	33	4	54	65	23	191	191	205	205	10,748	11,091	11,091	11,091	11,091	11,091	11,091	11,091	11,091	
Denver & Rio Grande Western	Feb.	2,167	5,066	177	5,452	6,596	516	553	113	943	1,064	284	192	1,586	1,586	3,498	3,498	3,943	3,943	3,943	3,943	3,943	3,943	3,943	3,943	3,943	
	2 mos.	2,167	10,346	407	11,177	13,312	59	1,071	299	1,931	2,157	565	381	3,386	3,386	7,359	7,359	8,094	8,094	8,094	8,094	8,094	8,094	8,094	8,094	8,094	
Detroit & Mackinac	Feb.	222	277	3	277	322	277	322	80	85	45	43	19	67	1,492	1,492	1,492	1,492	1,492	1,492	1,492	1,492	1,492	1,492	1,492	1,492	1,492
Detroit & Toledo Shore Line	Feb.	50	50	1,314	1,314	1,425	1,574	164	161	6	122	60	18	17	188	188	356	356	360	360	360	360	360	360	360		
Detroit, Toledo & Ironton	Feb.	464	1,622	1,622	1,622	1,683	2,069	273	211	21	262	230	98	35	449	449	1,039	1,039	1,534	1,534	1,534	1,534	1,534	1,534	1,534	1,534	
Duluth, Missabe & Iron Range	Feb.	569	352	395	552	552	516	516	78	72	742	111	13	13	1,987	1,987	1,987	1,987	1,987	1,987	1,987	1,987	1,987	1,987	1,987	1,987	
Duluth, South Shore & Atlantic	Feb.	553	553	984	10	1,041	1,272	276	271	21	21	10	140	159	223	223	191	191	191	191	191	191	191	191	191	191	
Duluth, Winnipeg & Pacific	Feb.	175	457	891	1	905	446	63	72	4	134	141	115	115	1,221	1,221	1,221	1,221	1,221	1,221	1,221	1,221	1,221	1,221	1,221	1,221	
Elgin, Joliet & Eastern	Feb.	236	6,132	236	6,132	3,548	4,378	119	119	119	1,247	1,247	1,247	1,247	1,247	1,247	1,247	1,247	1,247	1,247	1,247	1,247	1,247	1,247	1,247		
Erie	Feb.	223	10,797	512	12,196	13,660	1,451	1,589	235	209	1,996	498	1,996	1,996	1,996	1,996	1,996	1,996	1,996	1,996	1,996	1,996	1,996	1,996	1,996		
Florida East Coast	Feb.	571	218	405	405	3,068	3,534	350	43	43	539	43	1,078	1,078	1,078	1,078	1,078	1,078	1,078	1,078	1,078	1,078	1,078	1,078	1,078		
Georgia Railroad	Feb.	321	562	321	562	4,378	4,378	119	119	119	1,247	1,247	1,247	1,247	1,247	1,247	1,247	1,247	1,247	1,247	1,247	1,247	1,247	1,247			
Georgia & Florida	Feb.	360	277	553	553	1,331	1,543	533	574	574	1,620	1,620	1,620	1,620	1,620	1,620	1,620	1,620	1,620	1,620	1,620	1,620	1,620	1,620			
Grand Trunk Western	Feb.	932	4,507	174	4,999	5,039	625	616	52	845	861	89	89	89	89	89	89	89	89	89	89	89	89	89	89		
Can. Natl. Lines in New Eng.	Feb.	952	507	507	507	9,541	9,858	539	62	62	1,722	1,722	1,722	1,722	1,722	1,722	1,722	1,722	1,722	1,722	1,722	1,722	1,722	1,722			
Great Northern	Feb.	845	1,732	845	1,732	1,543	1,543	533	574	574	1,231	1,231	1,231	1,231	1,231	1,231	1,231	1,231	1,231	1,231	1,231	1,231	1,231	1,231			
Green Bay & Western	Feb.	360	14,708	693	14,715	16,415	2,666	2,666	340	340	3,733	3,522	3,522	3,522	3,522	3,522	3,522	3,522	3,522	3,522	3,522	3,522	3,522	3,522			
Illinois Terminal	Feb.	355	355	355	355	359	688	688	121	119	119	1,722	1,722	1,722	1,722	1,722	1,722	1,722	1,722	1,722	1,722	1,722	1,722	1,722			
Gulf, Mobile & Ohio	Feb.	2,766	11,928	693	13,585	15,295	1,816	1,816	1,320	1,388	2,674	549	4,315	4,315	10,486	10,486	1,496	1,496	1,496	1,496	1,496	1,496	1,496	1,496			
Illinois Central	Feb.	6,537	36,694	1,799	37,136	48,699	6,749	7,198	7,198	7,198	4,075	4,075	4,075	4,075	4,075	4,075	4,075	4,075	4,075	4,075	4,075	4,075	4,075	4,075			
Lake Superior & Ishpeming	Feb.	1,163	4,401	261	4,962	5,661	753	715	95	826	1,012	208	2,223	2,223	4,113	4,113	4,219	4,219	4,219	4,219	4,219	4,219	4,219	4,219			
Lehigh & Hudson River	Feb.	1,163	8,918	609	10,164	11,807	1,512	1,512	1,024	1,024	2,006	411	2,053	2,053	8,807	8,807	8,949	8,949	8,949	8,949	8,949	8,949	8,949	8,949			
Lehigh & New England	Feb.	1,160	1,835	573	573	512	512	1,051	1,184	1,184	1,184	1,184	1,184	1,184	1,184	1,184	1,184	1,184	1,184	1,184	1,184	1,184	1,184	1,184			
Lehigh Valley	Feb.	1,163	2,181	891	2,801	1,07	3,611	4,183	410	340	461	89	1,014	1,014	1,014	1,014	1,014	1,014	1,014	1,014	1,014	1,014	1,014	1,014	1,014		
Long Island	Feb.	1,163	2,181	891	5,930	447	349	6,821	5,875	5,875	917	70	717	717	1,314	1,314	1,314	1,314	1,314	1,314	1,314	1,314	1,314	1,314	1,314	1,314	1,314

(Continued from page 57)

REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands; i.e., with last three digits omitted)

MONTH OF FEBRUARY AND TWO MONTHS OF CALENDAR YEAR 1954

Name of Road	Average milesage operated during period	Operating Revenues		Operating Expenses		Total Depend. and Degree of Depend.	Total from railway operation	Net from railway taxes	Net railway operating income accrued 1953
		Total Fare Pax.	Total Freight Pax.	Total Rate-in- ments	Total Rate-in- ments		Traffic Trans- portation		
Louisiana & Arkansas	Feb.	1,976	2,111	2,258	1954	1953	1954	1953	1953
Louisiana & Nashville	2 mos.	752	4,006	125	4,294	320	336	250	287
Maine Central	Feb.	4,734	29,238	1,828	33,572	723	5,339	1,177	667
Midland Valley	Feb.	944	197	4,218	4,530	740	441	3,008	1,031
Minneapolis & St. Louis	Feb.	334	162	...	164	155	36	113	1,310
Mississippi Central	Feb.	148	395	...	195	199	10	116	1,239
Missouri-Illinois	Feb.	1,397	1,546	3	1,607	1,684	244	2,265	1,279
Missouri-Kansas-Texas	Feb.	1,307	2,076	8	3,020	3,551	492	524	1,142
Nashville, Chattanooga & St. Louis	Feb.	3,222	4,182	120	4,601	5,142	518	643	1,449
New Haven & Hartford	Feb.	10,713	4,913	250	5,696	1,123	1,945	1,083	1,083
New York Central	Feb.	6,922	14,698	742	17,070	18,923	3,037	3,361	3,696
Pittsburgh & Lake Erie	Feb.	1,061	2,129	118	2,451	3,039	6,949	5,17	5,584
St. Louis & San Antonio	Feb.	1,103	2,129	118	2,451	3,039	6,949	5,17	5,584
Gulf Coast Lines	Feb.	1,723	3,125	65	3,898	5,633	614	614	511
Monongahela	Feb.	177	421	...	424	515	61	161	344
Montour	Feb.	177	907	...	909	1,090	119	115	147
New York, Chicago & St. Louis	Feb.	531	311	...	1,062	1,066	1,116	1,13	1,13
New York, New Haven & Hartford	Feb.	1,032	4,946	270	2,492	100	3,803	4,54	4,611
New York, Susquehanna & Western	Feb.	120	387	...	441	430	49	51	52
Norfolk & Western	Feb.	2,135	13,123	8,057	23,399	11,845	12,771	1,495	1,789
New York Connecting	Feb.	2 mos.	2 mos.	2 mos.	2 mos.	2 mos.	2 mos.	2 mos.	2 mos.
Norfolk Southern	Feb.	620	1,498	...	1,522	1,741	297	22,889	26,941
Northern Pacific	Feb.	6,866	10,054	449	11,425	12,771	1,495	1,789	2,043
Northwestern Pacific	Feb.	331	904	1	928	1,018	761	73	844
Oklahoma City-Ada-Atoka	Feb.	132	163	3	1,761	1,901	2,046	2,142	2,142
Pennsylvania	Feb.	10,051	47,508	9,847	65,511	78,23	8,836	10,118	13,999
Pennsylvania-Reading Seashore Lines	Feb.	358	1,041	206	1,277	1,536	415	413	413

REVENUES AND EXPENSES OF RAILWAYS

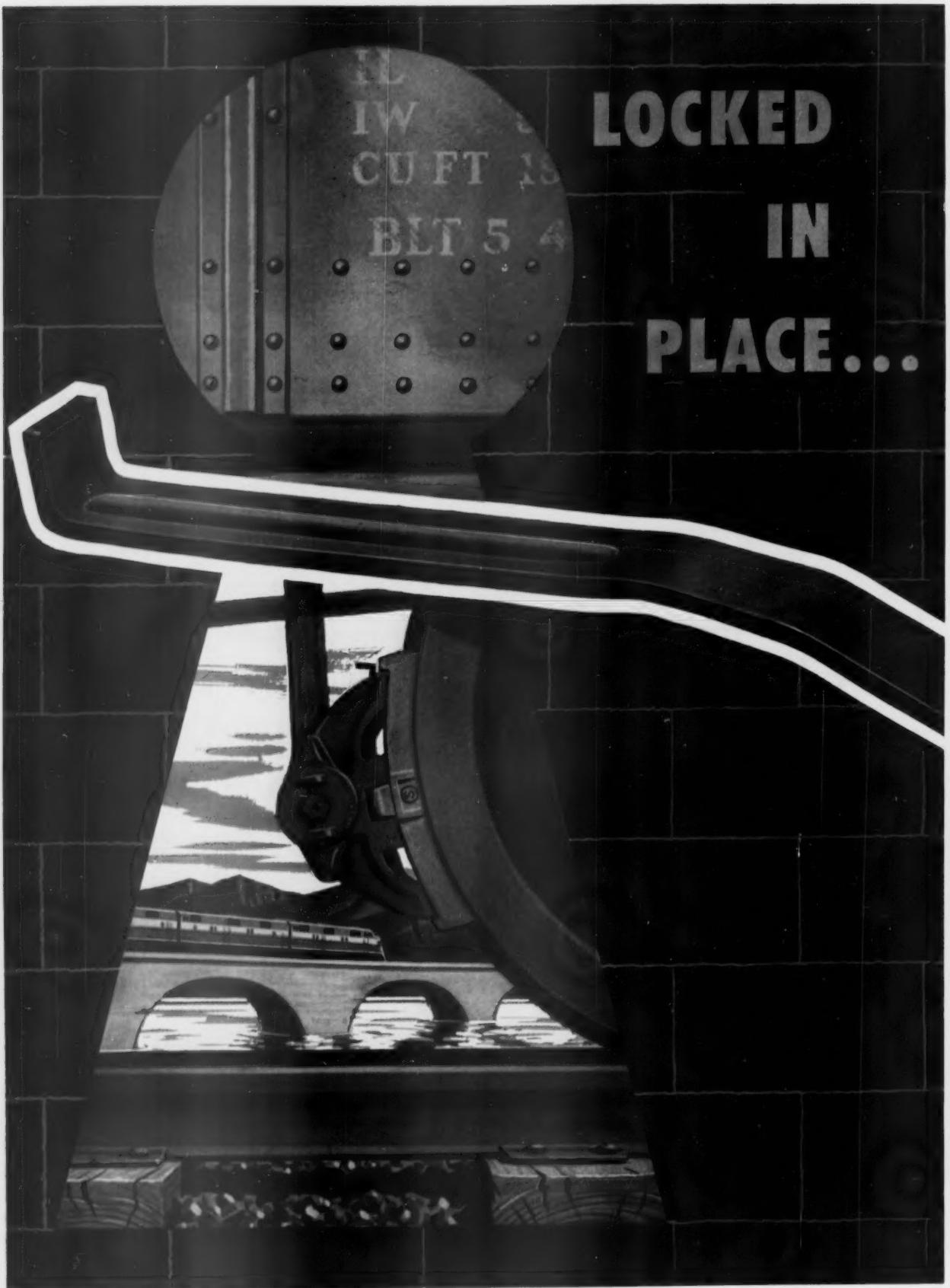
(Dollar figures are stated in thousands; i.e., with last three digits omitted)

MONTH OF FEBRUARY AND TWO MONTHS OF CALENDAR YEAR 1954

Cut here to file

Name of Road	Operating Expenses												Net railway																				
	Revenue			Total (inc. misc.)			Total			Maintenance			Trans-			Total	1953	1953	1954	Total	ratio	from railway	tax	Net railway									
Average mileage operated during period	Freight	Pass.	Pass.	Freight	Pass.	Total	1953	1953	1954	Total	Deprec.	Retire- ments	Traffic	portation	Total	1953	1953	1954	Total	ratio	from railway	tax	Net railway										
Pittsburgh & Shawmut	97	168	183	169	166	30	35	4	43	59	12	4	36	125	155	73.9	93.1	44	4	74	1.419	68.3	509	577									
Pittsburgh & West Virginia	97	348	349	339	53	76	7	86	117	24	25	4	36	10	76	82.2	95.7	13	25	41	1.419	68.3	509	577									
Sacramento Northern	132	548	550	719	84	89	23	169	161	36	60	158	447	517	81.3	91.8	100	9	77	1.419	68.3	509	577										
Reading	132	1,180	1,185	1,465	174	192	47	233	346	72	123	328	255	89	81.3	91.8	103	9	77	1.419	68.3	509	577										
Richmond, Fredericksburg & Potomac Feb.	1,304	8,001	525	9,143	10,440	993	1,341	185	1,681	2,239	42	143	3,638	6,857	78.5	80.8	82.0	75.0	78.8	1.419	68.3	509	577										
Richmond, Fredericksburg & Potomac Feb.	118	1,324	525	2,138	2,284	281	298	24	309	294	70	271	1,056	1,456	64.2	64.2	65.1	65.1	247	1.419	68.3	509	577										
Butland	392	392	637	—	714	913	141	148	124	143	24	43	328	447	517	81.3	91.8	100	9	77	1.419	68.3	509	577									
St. Louis-San Francisco & Texas Feb.	159	361	5	385	524	42	66	9	63	12	16	4	5	5	317	328	81.3	91.8	100	9	77	1.419	68.3	509	577								
St. Louis-Southwestern Lines	159	697	9	745	920	83	127	7	61	80	102	52	536	517	578	72.0	82	91.8	100	9	77	1.419	68.3	509	577								
St. Louis-San Francisco	1561	9,562	26	9,922	12,549	1,706	888	54	660	586	105	165	1,489	3,186	3,389	64.1	521	517	578	72.0	82	91.8	100	9	77	1.419	68.3	509	577				
Seaboard Air Line	4,601	8,066	407	9,192	9,568	1,536	1,597	137	1,599	1,668	498	341	3,465	7,446	7,803	81.0	81.6	1,746	65.9	63.7	77.4	77.4	77.4	77.4	77.4	77.4	77.4	77.4	77.4				
Southern	4,078	10,662	1,110	12,793	14,202	2,095	2,352	183	2,208	2,303	2,095	1,053	2,303	354	4,028	9,188	9,980	71.8	70.3	7,321	7,321	7,321	7,321	7,321	7,321	7,321	7,321	7,321	7,321				
Southern	4,078	21,614	2,371	26,055	28,907	4,179	4,670	366	4,274	5,383	994	684	5,379	15,438	15,996	80.6	78.6	82.2	82.2	82.2	82.2	82.2	82.2	82.2	82.2	82.2	82.2	82.2	82.2	82.2			
Alabama Great Southern	6,286	16,244	2,371	19,003	21,304	2,864	2,768	237	3,021	3,611	791	408	4,256	15,414	16,414	75.9	66.7	65.9	65.9	65.9	65.9	65.9	65.9	65.9	65.9	65.9	65.9	65.9	65.9	65.9			
Cinci. New Orleans & Texas Pacific Feb.	337	3,095	167	3,468	3,675	463	429	40	625	789	149	66	884	2,170	2,371	62.6	64.5	1,298	1,298	1,298	1,298	1,298	1,298	1,298	1,298	1,298	1,298						
Georgia Southern & Florida	337	5,922	379	6,227	6,488	927	855	78	1,390	1,573	298	135	1,791	3,229	3,54	80.6	78.6	78.6	78.6	78.6	78.6	78.6	78.6	78.6	78.6	78.6	78.6	78.6	78.6	78.6			
New Orleans & Northeastern	397	568	87	731	808	177	160	8	55	62	6	16	250	548	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484				
Spokane International	1,447	203	189	1,524	1,659	1,659	1,311	141	19	133	152	13	33	529	1,151	999	75.6	60.2	77.0	77.0	77.0	77.0	77.0	77.0	77.0	77.0	77.0	77.0	77.0	77.0	77.0	77.0	
Southern Pacific	8,119	30,858	2,493	35,800	42,031	4,982	4,982	40	625	789	149	66	884	2,170	2,371	62.6	64.5	1,298	1,298	1,298	1,298	1,298	1,298	1,298	1,298	1,298	1,298	1,298	1,298	1,298	1,298	1,298	
Texas & New Orleans	8,119	61,006	5,922	71,469	86,223	9,166	10,214	1,029	15,748	17,359	1,062	1,616	2,342	9,342	13,146	80.6	78.6	78.6	78.6	78.6	78.6	78.6	78.6	78.6	78.6	78.6	78.6	78.6	78.6	78.6	78.6		
Texas & New Orleans	4,292	19,252	1,044	21,640	25,379	3,556	4,013	259	3,010	3,132	263	527	1,021	1,222	1,222	80.6	78.6	78.6	78.6	78.6	78.6	78.6	78.6	78.6	78.6	78.6	78.6	78.6	78.6	78.6	78.6		
Texas & Northern	406	705	2	431	448	97	102	5	47	44	19	10	15	61	150	1,102	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	
Spokane, Portland & Seattle	944	1,894	65	2,111	2,488	316	338	48	326	305	106	30	737	30	1,501	1,543	71.1	62.0	61.1	61.1	61.1	61.1	61.1	61.1	61.1	61.1	61.1	61.1	61.1	61.1	61.1	61.1	
Tennessee Central	206	337	1	222	234	239	49	52	52	25	19	44	19	10	15	61	150	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6
Texas & Northern	152	406	2	431	448	97	102	5	47	44	19	10	15	61	150	1,102	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	
Texans	1,829	5,443	285	6,293	7,060	1,018	996	83	1,174	1,092	242	197	2,100	4,828	4,814	67.8	67.8	67.8	67.8	67.8	67.8	67.8	67.8	67.8	67.8	67.8	67.8	67.8	67.8	67.8	67.8		
Texas Mexican	110	110	67	111	222	275	34	6	22	24	11	11	55	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52				
Toledo, Peoria & Western	239	1,662	1	2,112	2,437	573	111	103	11	118	129	61	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60				
Union Pacific	9,821	30,167	2,106	34,523	38,057	3,800	4,695	439	4,701	7,550	1,357	975	13,319	27,402	29,507	77.8	77.5	77.5	77.5	77.5	77.5	77.5	77.5	77.5	77.5	77.5	77.5	77.5	77.5	77.5	77.5		
Utah	9,821	62,150	4,619	71,824	77,988	8,039	9,439	905	14,971	15,616	2,040	2,125	5,741	60,773	67,400	67.5	67.5	67.5	67.5	67.5	67.5	67.5	67.5	67.5	67.5	67.5	67.5	67.5	67.5	67.5	67.5		
Virginia	2,393	5,948	665	6,644	7,182	808	839	905	9,439	10,220	2,040	2,125	5,741	60,773	67,400	67.5	67.5	67.5	67.5	67.5	67.5	67.5	67.5	67.5	67.5	67.5	67.5	67.5	67.5	67.5	67.5		
Western Maryland	857	3,153	3	3,269	3,840	417	4,318	7	13	155	153	13	13	11	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60			
Western Pacific	1,193	3,297	150	3,521	4,759	1,653	1,653	69	578	605	1,040	1,242	1,242	1,242	1,242	1,242	1,242	1,242	1,242	1,242	1,242	1,242	1,242	1,242	1,242	1,242	1,242						
Wisconsin Central	1,193	6,633	343	7,384	8,207	1,534	1,534	135	1,534	1,534	1,534	1,534	1,534	1,534	1,534	1,534	1,534	1,534	1,534	1,534	1,534	1,534	1,534	1,534	1,534	1,534	1,534	1,534	1,534	1,534			
Wisconsin Central	1,042	5,941	59	4,192	4,192	6,648	6,648	7	13	155	153	13	13	11	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60			

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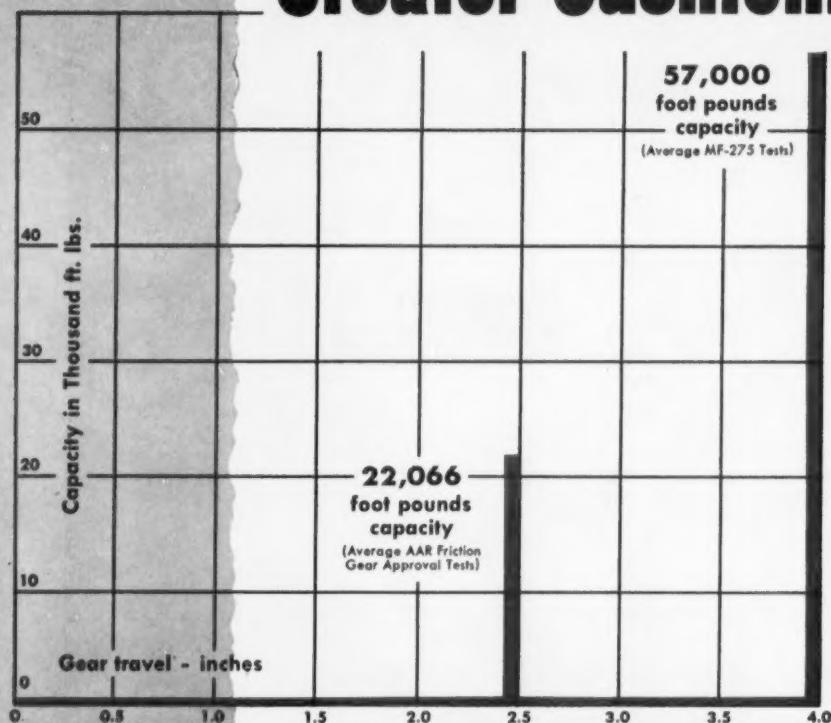


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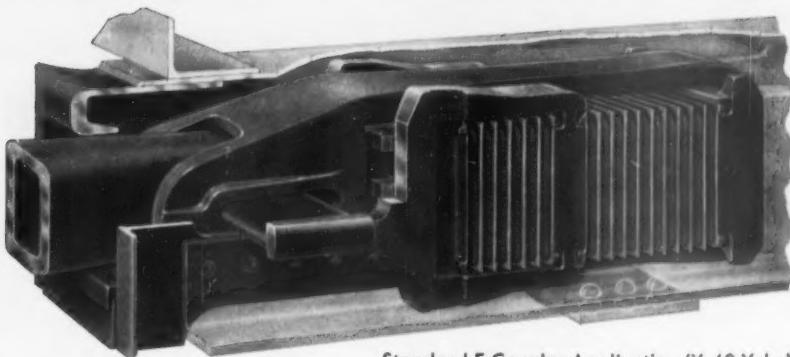
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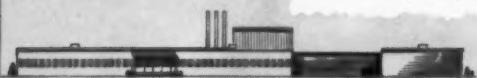
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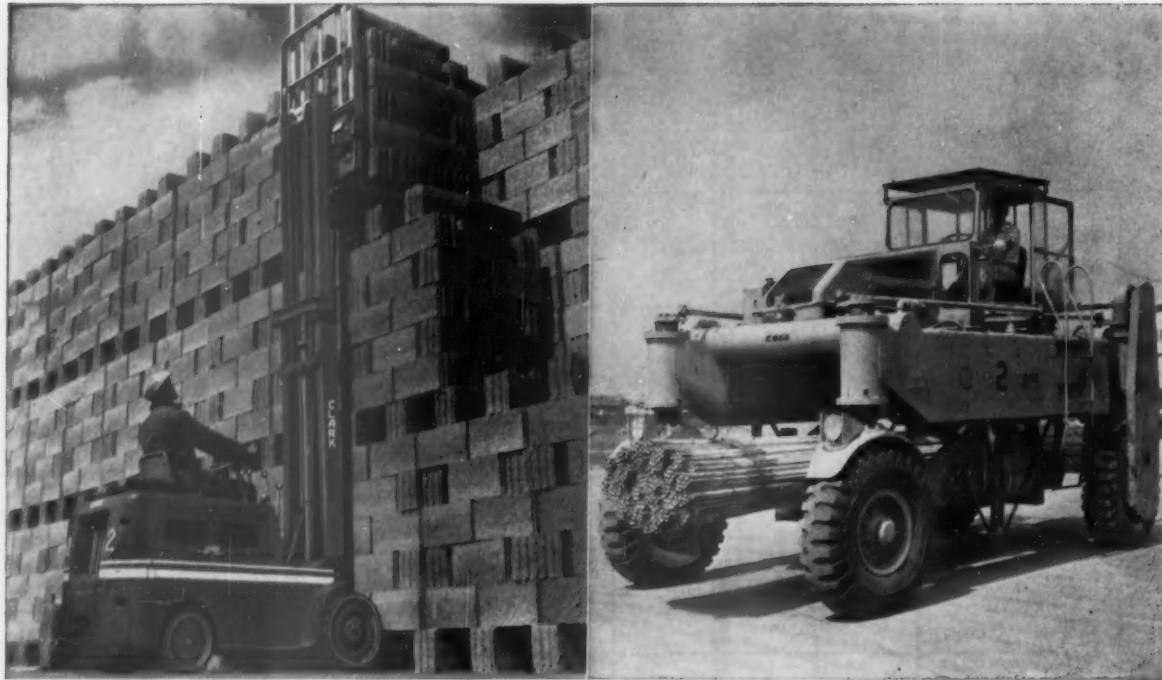
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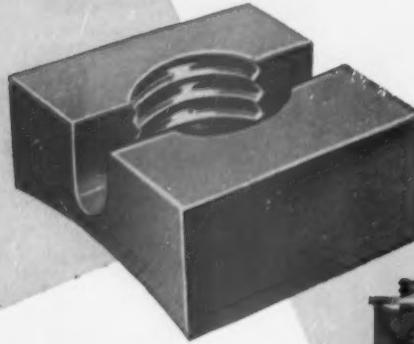


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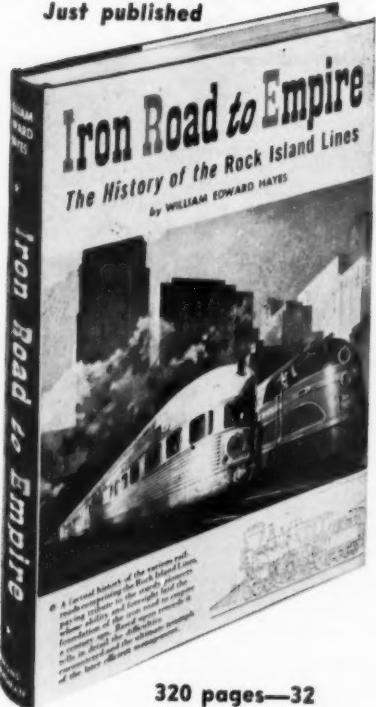
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